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# An assessment of the effectiveness of a kindergarten day care parent education program on the development of parents' problem solving abilities.

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AN ASSESSMENT OF THE EFFECTIVENESS OF A KINDERGARTEN  
DAY CARE PARENT EDUCATION PROGRAM ON THE DEVELOPMENT  
OF PARENTS' PROBLEM SOLVING ABILITIES

A Dissertation Presented

By

LUCILE H. LAYTON

Submitted to the Graduate School of the  
University of Massachusetts in partial fulfillment  
of the requirements for the degree of

DOCTOR OF EDUCATION

September 1978

Education

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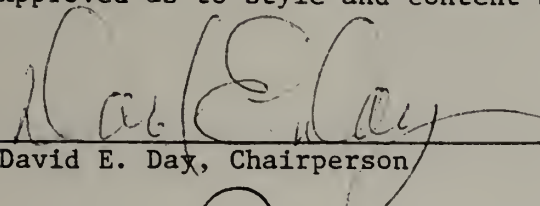
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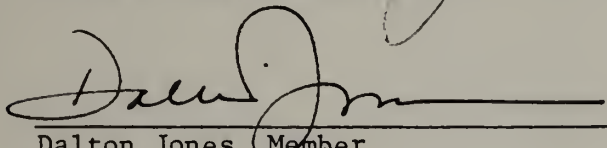
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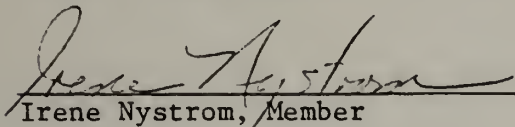
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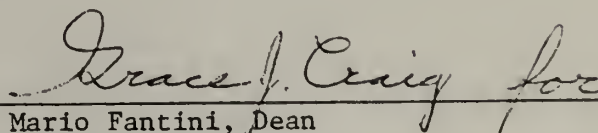
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## D E D I C A T I O N

To the memory of my father,  
Rev. Roland Tillman Heacock,  
a scholar and humanitarian;  
and  
to my mother,  
Lucile LaCour Heacock.

## A C K N O W L E D G E M E N T S

Many people have assisted me in gaining my doctorate and in completing this dissertation. First, I wish to recognize and thank my Dissertation Committee, whose intellectual guidance and steadfast faith led me so capably to the achievement of this goal.

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And last, and most important, to my children, Deborah, Marshall, Morris, Timothy and Alyssa, who shared their mother for so long with the dream of accomplishing this goal. To my sister, Joan, who facilitated the last leg of this journey with her skillful assistance and encouragement and to all my friends who have shared this dream with me.

## A B S T R A C T

An Assessment of the Effectiveness of a Kindergarten  
Day Care Parent Education Program on the Development  
of Parents' Problem Solving Abilities

B.A., Willimantic State College, 1966  
M.A., American International College, 1971  
Ed.D., University of Massachusetts

Directed by: Dr. David E. Day

A most important issue in early childhood education today is the effectiveness of parent education as a part of the preschool programs. Several university sponsored research projects, concentrating on parent intervention as components of group preschool programs, or as separate home-based projects, have had varying success in raising children's IQ scores. Those programs which involved parents and trained them to become the major intervention agent have proven to be the most beneficial to both participating children and parents.

Day care programs present special problems for the operation of parent training. This is due primarily to the fact that parents whose children qualify for federally funded Title XX Day Care must not only be economically low income, but must also be employed or attending school full time.

This research study attempted to structure an educational training program for parents whose children attended a kindergarten class in a day care center; all were working or attending school.

Nineteen of the twenty-four eligible parents, responded to mailed questionnaires and needs assessments, and indicated their in participating in an educational training program.

The focus of the four month training program was upon the development of problem solving abilities of both parents and children through the acquisition of seven specific behavioral objectives. Two important and unique features of the program were that it was held at the day care center site, utilizing the facilities and staff and in addition, the curriculum was based on increasing cognitive abilities that were characteristic of all young children, rather than a curriculum designed to alleviate deficits presumed to be prevalent in all low socio-economic families.

Only six of the original nineteen parents completed the full training. The post-training assessments revealed that all six mothers and children displayed significant improvement in their problem-solving behavior. However, an important issue became why two-thirds of the parents failed to complete the full training while the other one-third were able to do so. A telephone interview was conducted to ascertain the reason. An analysis of this data plus information gleaned from the demographic survey of these parents revealed that those who failed to complete the program were for the most part single mothers who were heads of households and were on the lower end of the economic disadvantaged scale, in terms of incomes. Results also showed that even though the training format and curriculum content had proven to be effective, it was not appropriate for all parents.

The conclusion was drawn that some parents, particularly single mothers who were heads of households and functioning on incomes at or below the poverty level, often could not cope with any added responsibilities and strains in their daily lives. Consequently, they were unable to complete the entire training program even though they had indicated interest.



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## C H A P T E R I

### INTRODUCTION

One of the most significant contributions made in the field of education during the decade of the 1960's was the proliferation of early childhood programs financed by the federal government. These programs were specifically designed for young children of the nation's poor, predominantly those of racial and ethnic minorities. The whole push to educate the economically disadvantaged was part of President Lyndon Johnson's "War on Poverty Program," which was institutionalized by the Economic Opportunity Act of 1964. Under that act, thousands of poor children from across the nation were enrolled in federally funded pre-school intervention programs called Head Start.

The arguments leading to the establishment of Head Start and other pre-school education programs came from a number of outstanding educators and psychologists. Among them were Benjamin Bloom (1964) and J. McVicker Hunt (1961). Their arguments addressed the importance of early experience in a child's development, especially cognitive development. Bloom further hypothesized that for "extremes in environment, there were clear cut differences in the level of intelligence reached by children, but that their IQ, which was depressed because of negative environment, could be raised if placed in the proper educational environment." (p. 68)

The conceptions of the role of the family and of early experience was not new, but they gained momentum during the 1960's. A strong argument developed for parent participation in early education programs. It was contended that a child's early experiences affects subsequent intellectual growth and educational achievement. Children who grow up in homes disadvantaged by racial discrimination and poverty are likely to have a deficit of experiences presumed to be essential to academic achievement in public school (Deutsch, 1964; Hunt, 1961). It was further theorized that this deficit which was perceived to be a consequence of the family and community became cumulative during the pre-school and elementary school years. Therefore, it was felt that intervention should involve parents in order to assist them in providing a more adequate educational environment for their young children.

Parent involvement in compensatory programs is a complex concept, both in theory and in practice. It covers a range of participatory forms—from parents as paid paraprofessionals, parents as recipients of skill training, tutors of their own children, and parents as advisors or decision-makers for school programs and day care centers.

However, there are relatively few programs for parents who have children enrolled in full day care and who are working or attending school on a full time basis. Most educational programs have been for parents residing in homes. In addition, the majority of training programs for parents have had objectives based on the deficit argument, for example, increasing children's language and

cognitive skills for better public school performance. There have been few programs with the objective of increasing children's problem solving behaviors, which are based on developmental patterns characteristic of most children.

This research study will concentrate upon the involvement of parents of children in full day care programs and will evaluate the effects of a training and education program founded on problem solving behaviors.

The focus on children's problem solving behaviors was selected because it is developmentally based and because these behaviors encompassed the specific concerns raised by parents in a needs assessment that was conducted prior to the study.

#### Purpose of the Study

The purpose of this research project was to assess the effectiveness of a kindergarten day care parent education program on the development of parent's problem solving abilities. The participants were low-income working and welfare parents whose children attended a kindergarten class in a large state-funded day care center in Springfield, Massachusetts.

#### Importance of the Study

The importance of this study lies in the fact that it deals with a population upon which only a limited number of studies have been made regarding parent education. The population is income eligible parents whose children attend day care programs which are funded by state and federal monies. Day care presents special problems

for the operation of parent training programs due primarily to the fact that these parents are bound by rigid eligibility requirements that specify that they have to be working towards self-sufficiency and/or self-support through either employment or school. As a consequence, parents who may wish to be involved more in their child's schooling or perhaps their own personal growth and development are hampered by restraints upon their time and energy because they are employed or going to school.

Another important aspect of the study is the curriculum which is based on utilizing and increasing cognitive abilities that are characteristic for most young children rather than a curriculum of activities designed to make-up deficits that are assumed to be prevalent in low socio-economic families.

#### Objectives of Study

The major goal of the research was to assist parents and their children in the development of problem solving abilities through the acquisition of seven specific behavioral objectives. They are as follows:

1. Parents and children will increase their observational skills.
2. Parents and children will learn to ask new and different kinds of questions.
3. Parents and children will use language behaviors for relating, comparing and organizing objects and events.
4. Parents and children will increase their skills to relate



and compare things and events in their daily environments by solving problems.

5. Parents and children will learn to better understand each other's perspective and way of viewing a problem situation.
6. Parents and children will learn to make better choices on the basis of concrete evidence.
7. Parents and children will learn to consider alternative answers and solutions to problems.

#### Summary of Behavioral Objectives

Parents were encouraged to view problem solving behaviors for themselves and their children as an important aspect of education. A beginning emphasis on problem solving began with the awareness that the senses—sight, touch, taste and smell—can bring them and their child new information about the world. They also were helped to see that the more the different senses are developed and used, the more information is obtained. They became aware of the possibility that for a child under eight the use of physical actions and of observing and listening could be as important for constructing knowledge as the use of language.

The seven behavioral goals were based on the knowledge that children of kindergarten age want to initiate activities, to explore, to discover the relationships in their environments and to use the this knowledge in constructing further knowledge. They, as parents, were encouraged to support children's curiosity by allowing them to utilize their need to manipulate, smell, taste and look at whatever

is around them. Parents were also encouraged to probe and discover what was in their environments and how objects and events were related for solving problems. They were also encouraged to increase the number of meaningful experiences they had with their children.

Parents were shown that many of the interactions which they initiate with their children can promote problem solving behavior by creating a conflict or problem and that an effective means for solving the conflict is how they phrase and ask questions.

Another important behavioral goal which parents and children worked towards internalizing was thinking how things related by comparing them with what they already know or with new things and noting similarities and differences. These processes helped parents and children become aware of knowledge as an understanding of relationships. For example, a child was helped to learn the concept of volume by playing with measuring cups and observing and feeling that the one measuring cup is large because it holds more, and that another cup is smaller since it holds less. By playing with different size containers, the child discovers that the "biggest" cup can't always be called the "biggest," for when comparing it to another that holds more but looks less, the original cup is not the "biggest."

Parents also learned that problem solving was facilitated if the child could think of differences in points of view. Young children often consider something only from their point of view or perspective and not what others may perceive or think. It was important to understand that this behavior on the part of five and six year olds is common and with additional time and more experiences they will

begin to coordinate their own perspectives with what others are thinking and may be perceiving, and then information.

### Design of the Study

The educational training program for parents of kindergarten students in a day care center was unique because of the following features:

1. Training took place in the kindergarten classroom at times designated by the parents as convenient to their work schedule, during the noon hour, in the afternoon, and in the evening. The classes were approximately one and one-half to two hours long.
2. The trainers were members of the day care staff. Learning centers were areas of the kindergarten classroom which included the block corner, art and science area, library and reading readiness center.
3. Upon completion of three weeks of classes, there was a follow-up period lasting three months. This included monthly home visits made by the trainer to observe parental use of the curriculum guide with their children.
4. The curriculum and teaching methods were designed towards the development of the seven problem solving behaviors.

The assumption directing this study was that parents' participation in the educational program would increase their problem solving behaviors and their children's problem solving behavior and that these behaviors would be observable as described by the seven problem solving behavioral objectives. This assumption was to be tested.



### Limitations of the Study

1. One practical limitation of this study was that there was no control group with which to compare any changes which might have been brought about through the training program.
2. Another limitation was that if the training program (treatment) was successful, the results would not show what aspect of the program was most responsible.
3. A further limitation was that one can only generalize the findings on groups that are similar to the population described in this study.

### Definitions of Terms

*Parent Training.*—(For this study). The development of problem solving abilities through the implementation of the seven problem solving behaviors.

*Problem Solving.*—The perception of conflict and the process of recognizing the relationships between the elements of a conflicting situation and alternatives for resolution of the conflict.

*Full Day Care.*—The care of a number of children away from their homes for more than four hours of the day. In this study, the term will refer to children cared for in a day care center for seven or more hours, while their parents are working or in school. Children are given educational, nutritional and health care while in attendance.

Rationale for Post Training Telephone Interview

During the three month phase of the training program, between the initial one-month group training classes and the end of the evaluation period, six mothers out of the nineteen that completed the pre-assessment and the three weekly training classes were unable to complete their participation in the program. In addition, seven parents did not participate in the end of the training assessment sessions. Thus, there was a lack of post-training data on thirteen of the nineteen parents. Due to this condition, it was decided to follow-up these thirteen families with a telephone interview questionnaire to determine the reasons for their non-participation. It was felt that this information would be useful to analyze in relation to the data from the six parents that successfully completed the study.

## C H A P T E R   I I

### REVIEW OF THE LITERATURE

An important issue in early childhood education today is the nature of parent education and training programs. This chapter, the Review of the Literature, will examine such fundamental concerns as:

1. The interactions which transpire between parents and children which influence their cognitive, social and emotional development.
2. The ability of families to meet their child care functions and to provide for growth and development of their children.
3. The effectiveness of selected parent intervention programs for improving the pre-school child's school performance and achievement.
4. The need for parent education for parents of children enrolled in day care programs.
5. The need for programs that incorporate general developmental trends in children.

#### Parental Behavior and Its Effect on the Child

While it has been obvious for some time that parents greatly affected their children's development, it is not clear just what aspects of that interaction between the parent and child are relevant for understanding parental influences on cognitive and emotional development

of young children. However, knowledge of parental influence on early development, especially that which is pertinent to the day care population, has helped to provide a basis for planning and practice in day care facilities and home-based programs.

Over the years, there have been many studies made, the results of which suggest that there are global clusters of parental (mostly maternal) behavior which affect children's educational capabilities as well as their affective and social development.

Researchers, Rosen and D'Andrade (1959), Crandall et al., (1960) and Chance (1961), found that the manner in which mothers respond towards their children, as well as their interaction patterns with them has a great deal to do with the child's achievement level in school. These studies also suggest that parents who train their children from an early age to be independent in thinking and acting, while supporting their needs for emotional dependence, help that child develop the independence necessary for school success and have children who are high achievers.

There has also been evidence from observations and parental reports which show that maternal warmth, high emotional involvement and interaction, and general parental interest, are positively associated with children's achievement (Milner, 1951; Rosen, D'Andrade, 1959; Bing, 1963; Baumrind and Black, 1967; Slaughter, 1968; Solomon et al., 1969).

Slaughter's study did show that low income Black mothers as compared with middle-class Black mothers may accompany their warmth and support for the child with negative attitudes towards both teacher

and school (Slaughter, 1968). On the negative side of the picture, parents who over-indulge, over-protect, and actually display an intrusiveness in the lives of their children, cause a lowering of reading and IQ scores after the child reaches four years of age (Stewart, 1950; Bayley and Shaeffer, 1964).

Bronfenbrenner (1958) suggested that middle class mothers differ from working class mothers in their acceptance of their children's behavior. Middle class mothers were more democratic and responsive to the child's feelings, whereas, working class mothers were concerned with external standards of conduct and adherence to community norms.

Other studies of parental behavior and its effect on children were done by Baldwin, Kalhorn and Bresse (1945). These studies supported the fact that children who were high achievers had parents who treated them warmly and provided them with emotional support and encouragement. Then in 1968, Bronfenbrenner's review led him to conclude that there was a particular way that parents and children interacted which enhanced the child's psychological development. He believed that the key element in the early years was the involvement of the parent and child in verbal interaction around a cognitively challenging task.

Just as Bronfenbrenner and other psychologists felt that certain patterns of interaction in the home can shape children's psychological development, other researchers were noting the manner in which parental behavior affected a child's cognitive development.

In studies by Watts, Barnett and Harfar (1973), and White, Watts, Barnett, Kaban, Marmor and Shapiro (1973), it was noted that



the major difference in the human interaction experienced by well-developing children and less developing children was that the mothers of the former group spent much more time directly participating in their intellectually valuable experiences than did the mother of the latter group, although both mothers employed many techniques to participate in their children's experience, including teaching, helping, entertaining, conversing and simply sharing in the activity like a playmate. However, mothers of intellectually well-developing children were much more selective in their participation of their child's intellectual experience; while mothers of less well-developing children were more likely to become involved in socio-physical experiences like "rough-housing" and "play-fighting."

An additional relationship between *parental behavior* and its *effect on children* is evident in a number of studies. Parents' expectations, attitudes and values influence their children's behavior, and formation of the children's own expectations, attitudes and values. It has been found that mothers who have high aspirations for their children and who put pressure on them for school achievement, influence the child's motivation to achieve (Rosen and D'Andrade, 1959; Bing, 1963; Wolf, 1964). In addition, when mothers expressed satisfaction with their child's level of achievement, it reinforced their further achievement efforts (Rosen and D'Andrade, 1959). Several studies have also shown that low income mothers value achievement highly (Mannino, 1962; Coleman, 1966; Hess et al., 1968). However, there are indications that many Black mothers and probably those of other ethnic minorities feel a sense of powerlessness regarding their

ability to help their children achieve in school (Kamii and Radin, 1967; Hess et al., 1968; Slaughter, 1970).

### Conclusions

Parent Intervention programs like the ones discussed show that the attitudes and behavior of the mothers toward themselves and their children are capable of improving. In fact, the benefits of these programs not only flow to the target child but also to the other children in the family and in the neighborhood as well. Programs which have attained the most success have incorporated both home visits and group meetings.

Two of the most successful mother intervention projects were based upon the principle that the "psychological development of the young child is enhanced through his involvement in progressively more complex, enduring patterns of reciprocal, contingent interaction with persons with whom he has established a mutual and enduring emotional attachment" (Bronferbrenner, 1967a).

### The Ability of Families to Meet Their Child

#### Care Functions and to Provide for Their

#### Children's Growth and Development

The family is the primary and most fundamental influence on the lives of children. It acts as the mechanism for delivering to young children the educational and developmental stimuli which will shape their later lives. However, not all families are able to adequately fulfill their child-rearing functions.

In 1976, the National Council of Organizations for Children and Youth published a fact book called Bicentennial Assessment on the Status of America's Children (1976). Statistical data quoted was based on 1974 census figures and concerned changes in the American family structure, children in poverty, child health problems, child care needs as well as federal program serving children.

Statistics given showed that in 1974 more than 17.6 million children lived in families with incomes of less than the True Poverty Standard of \$7500 per year. Of those, about 5.5 million were under the age of six years of age (Census, 1974). It was also found that certain groups of children were more likely to be members of poor families. Those were: children in families headed by women—51.5 percent were living below the official poverty level. Others were large families, less educated families, rural and southern families, and minority families. In 1974, children in Black families were 3½ times as likely to be officially poor as were white children.

#### Selected Government Programs for Children

There are a number of federal programs which attempt to alleviate the conditions of poverty by providing funds that can be used to support services to young children and their families. Those which most benefit children, in the form of cash to families are: Aid to Families with Dependent Children (AFDC), Unemployment Compensation, and Social Security Survivor or Disability Benefits, Supplemental Security Income and Veterans Benefits. Those of most benefit to children in the form of inkind assistance are: Food stamps, Title I Educational Programs and Head Start.



Child Health programs like Medicaid and the EPSDT—Early and Periodic Screening Diagnosis and Treatment—assist millions of low income children and families needing medical treatment and services. Maternal and child health programs provide services to low income mothers and children in an attempt to reduce infant mortality. The school lunch program is one of the most important and comprehensive nutrition programs for children. In 1975, 1.9 million students in 89,000 schools received either free lunches or lunches at a reduced rate. In addition, there was also a School Breakfast Program and Special Food Service Program for low income and handicapped children in day care and other non-residential settings.

#### Need for Day Care Services

Imperative to the needs of mothers—poor working and single mothers—and equally important to the developmental needs of children in most families, are quality day care services, either in the home or a center. In fact, there are families of adequate economic means who have two parents in the home but who still may wish for at least a few hours of day care where their children can meet and interact with other pre-school youngsters to learn about the world around them and develop their skills. More important, those families, who for economic or family reasons, cannot care for their children all or part of the day must have viable choices of child care services. The quality of the day care service, where many children have to spend a major part of their lives, is a vital concern to state and federal licensing agencies (HEW, 1974).

According to a national study, *Windows on Day Care* (1972), three-fifths of all centers reviewed nationwide were of fair or poor quality. The problem of quality is not, however, unique only to the day care centers used by poor people. However, poor children's home environment is often characterized by densely crowded, dilapidated structures with inadequate and unsanitary conditions. The question arises of how these families, living in the extremes of poverty, can be helped to educate and rear their children adequately.

### Radical Intervention

One program which attempted to reach families with children living under these circumstances and assist them towards normal development was the *Milwaukee Project* (Heber et al., 1972). The goal of this intervention was the removal of the child from his home with subsequent placement into a more growth producing environment (*Rehabilitation of Families at Risk for Mental Retardation* [Heber, 1971]). The population consisted of forty Black mothers and their infants living in a depressed area of Milwaukee. The intervention began when the child was three months of age. At that time, he/she was placed under the care of a highly trained teacher who was responsible for the child's total care. Each child remained in the home until his mother was sufficiently confident in the teacher to allow her child to go to a center. From the time the child entered the home until he was twelve to fifteen months old, he had one primary caregiver. As the child aged, the adult/child ratio increased, until at the age of two years to five years, there was a three to one ratio of children to adults. There was an educational program for infants and mothers

which was characterized by the creation of an "enduring one to one relationship which involved a reciprocal interaction around interesting and challenging activities." The teacher remained the primary agent of the intervention. Group experiences were introduced which emphasized both language and structured cognitive activities. Mothers were given job training, as nurses aids and the like, in order to raise their employment potential.

At twelve months, the children's mean IQ was raised from 75 or less to just under 115. By two years of age, the experimental group's IQ had risen to 120. In respect to statistics and IQ, the program was a success. There was little doubt, that the program would continue to succeed as long as intervention lasted.

However, two questions remained. When intervention ended, what would happen to the gains? Was it likely that children would retain their superior levels of cognitive development when they returned to their communities? And what of the children's identity formation in relation to their families and other children in the neighborhood from whom they had been removed?

The Milwaukee Project was a radical form of intervention which completely changed the child's deprived environment and substituted for it a middle-class environment. It also delegated primary responsibility for the child's development to others completely alien to the child's family. In addition, it was impractical for implementation, and in reality destructive to the family unit, for it did not allow the family to develop the necessary prerequisites to sustain itself or the growth of its members.

Bronfenbrenner (1974) believed that by providing certain systems of support of families, so that they perform their child rearing tasks—proper nutrition, health, employment, housing and education—poor families would not need special intervention programs any more than do middle class families.

### Ecological Intervention

Another well known study which made a radical change or reorganization of the environment in which children were living was the famous Skeels Experiment (1938) of thirty years ago. The children were orphans residing in an orphanage. They were removed and placed in an institutional ward for mentally retarded adults. The retarded women were each assigned a child for whom they were principally responsible. The experimental group of children were cared for by these attendants and older girls who spent an appreciable amount of time with "the children playing, talking and training them." The children's IQ was raised 28 points—from 14 to 92. IQ's of other children in the control group, who remained in the orphanage, dropped 26 points.

The factors that existed in the Skeels Experiment were somewhat the same as those in successful intervention programs (Levenstein, 1970; Karnes, 1972, 1970)—the development of a warm, emotional relationship which evolved between mother and child where the mother gives and receives responses from the child (Levenstein, 1970).



Effectiveness of Selected Parent Intervention Programs

In 1970, Gray contrasted a pre-school program with a program which taught mothers to support and foster the development of their children. He found that the parent-intervention program in the home showed equal effectiveness as the pre-school program. In addition, its costs were lower and it allowed vertical diffusion to younger children in families as well as horizontal diffusion through the neighborhood. The results from Gray's study suggest that a home parent education program that teaches mothers to teach their own children could be either a supplement or an alternative to a pre-school program.

Other studies of parents being trained as educators were made by Weikart and Lambie (1969) and Gordon who used paraprofessionals as parent educators to teach parents specific activities to be used with infants during the first year of their lives.

Investigators, Gilmer (1969), McCarthy (1968), Levenstein (1969), Karnes et al. (1969), noted positive effects on parents' attitudes about themselves as well as increased IQ scores on their children. These studies have shown that parent behavioral changes can affect their young children's behavior. Although it is not clear how these effects come about, it is felt that good effects are more likely to result when training and involvement are intensive and when both the parents and the children's needs are met.

An increasing number of researchers have concentrated upon the study of programs to foster intellectual development of children through parents' training. Klaus and Gray (1968) utilized home

visitors to actively engage parents in the education of their children as a supplement for a pre-school program. Significant difference was found in the experimental and the control group. Experimental group families showed rapid development, however, it was not known the long range effects or whether home stimulation would be sufficient to maintain development without continued support.

### Verbal Interaction Project

The Levenstein model, The Verbal Interaction Project, Levenstein (1972, 1970), took place in the Suburban Long Island Community of Mineola. It had for its experimental group predominately Black infants two to three years of age.

The parents represented the upper level of economic disadvantage, with only twenty-five percent of the families on the welfare lists. In fact, the educational level was rather high for an economically disadvantaged group, eleventh graders. The nature of the intervention was semi-weekly visits to the homes by a trained paraprofessional called "a Toy Demonstrator," her job was to stimulate interaction between the child and the mother using a kit of toys and books which she brought with her. These items were chosen for their verbal, perceptual, conceptual, and motor stimulus properties and were of increasing complexity. These materials used were referred to as Verbal Interaction Stimulus Materials (VISM). During each training session, the demonstrator emphasized the importance of mother/child play interaction and verbalization.

The process through which the Levenstein approach achieved substantial increase in IQ was based upon the development of warm reciprocal verbal relationship between mother and child. It was this process of the two person system, not emphasis on the child alone, which sustained and fostered the child's growth. Since the participants remained together even after the intervention program ceased, the momentum continued reinforcing itself. Parent involvement in the child's learning was primary and the emphasis was on the role of parent as the teacher; the Toy Demonstrator was secondary. Levenstein's instructions to the home visitor was as follows:

Treat the mother as a colleague in a joint endeavor in behalf of the child. Share your verbal stimulation techniques with her by demonstrating them in play with her child; then draw her into your play and take a secondary role as soon as you can while she repeats and elaborates what she has seen you do. Encourage her to read and play with the child between Home Sessions. Keep constantly in mind that the child's primary and continuing educational relationship is with his mother; do all you can to enhance that relationship.  
(Levenstein, 1970a, p. 429)

Certain specific factors contributed to the population of children in Levensteins' study to make and maintain IQ gains. One factor was the warm, emotional relationship which evolved between the mother and child, especially those which were around verbally challenging activities.

Perhaps another reason for her success was due to her procedures for selecting her participants. It is not known how carefully her screening process was for the participating parents; however, it is known that they were not a severely deprived population.

Experimental Program for Disadvantaged Mothers

Dr. Merle Karnes, set up a series of programs for disadvantaged mothers in Urbana, Illinois in 1970. She employed a variety of intervention strategies similar to Levenstein's as far as home visits were concerned. In her attempts to motivate mother's enthusiasm; Karnes experimented with several unique techniques which included: paying mothers a stipend of \$1.50 per hour to attend the meetings and to furnish transportation. Mothers who attended the program were given eleven educational toys designed to create opportunities for verbal development. In addition, they were given recognition by the home demonstrators as being vitally important members of the intellectual team.

In another study, Karnes (1970), and her colleagues sought to learn if there were any factors in the children's background which influenced their capacity to profit from home-based intervention. They noted that in their study mothers who worked full time showed markedly lower test scores and measures of performance in program activities. In addition, these mothers had poorer attendance at weekly meetings and received low ratings on the quality of the mother-child interaction observed during home visits.

Taking these findings into account when assessing the consistently inferior pattern of response exhibited by both mother and child in families where mothers were employed, Karnes stated:

It seems fair to conclude that in spite of verbal support of the parent training program, the six mothers who were fully employed did not have the time or the energy to implement program goals. In general mothers employed on a full time basis outside the home cannot



effectively participate and their children may be better served through day care placement. (Karnes, p. 260-261).

Karnes' conclusions regarding the negative effect of working parents on the child's achievement may not be completely valid for she is drawing on a small number of cases—six—and from an extremely disadvantaged population. Perhaps in a less disadvantaged group, like Levenstein's, the negative effects of full time employment would be minimal.

Additionally, although there seems to be some validity in Karnes' conclusions, it should be mentioned that from the author's experience, working parents often seem to be more highly motivated towards improving the overall circumstances of the family. They seem to want what is best for children's growth and development; however, a long intensive and extensive parent intervention program may not be what can realistically fit into their busy schedules. A less structured type of parent education program might have proven more successful.

Some federally sponsored programs have shown that the following characteristics seem important in order to help families meet their child care functions and to provide for their more optimum development. Of especial importance in parent/education programs are the following characteristics found in Karnes, Levenstein and Gordon's Projects:

1. Frequent home visits in which parents and children are encouraged through example and with the aid of appropriate materials to engage in discussions around tasks which are progressively more difficult in order to stimulate the child's cognitive functioning.

2. The parent's status as the primary agent of intervention is given support, for intervention programs which place the parent in a subordinate role is counter-productive.
3. All members of the family can be involved in parent intervention programs. In this way vertical diffusion to younger children can be maximized, and older members too can participate as agents of intervention.

The Need for Parent Education for Parent's  
Enrolled in Day Care Centers

The concept of assisting parents to learn to employ specific techniques which could help raise their children's IQ and over-all development has been the goal of both group pre-school programs with parent intervention components and home-based programs (Gordon, 1972, 1973; Levenstein, 1972; Karnes, 1968; Karnes et al, 1969).

However, day care programs are unique and offer problems to any effort to provide parent training classes. Perhaps what is needed is a less structured form of parent education offered in the day care center setting. Parents could be encouraged to discuss the development of their child with the staff and should be permitted whenever possible to participate in the program and observe their child at work and play in the center. In this manner, parents who are employed, going to school or need day care for reasons of their own or their children's inability to cope with pressures, could do so and still be given some assistance in helping to raise their children.

The Need for Programs Which Support the  
Developmental Trends in Children

One major belief permeating the philosophy and planning of most programs for children is that the welfare of children can best be met by combining comprehensive services which they need—health, nutritional, social, psychological and educational. If infants and young children are to be truly served, concern for their welfare, health and education must be translated into services for the entire family.

In the context of curriculum for early development programs, the physical, emotional and social needs are the same regardless of the family. However, the ways in which these needs can best be met will vary according to the population being served. The early development programs are founded on beliefs and assumptions about the nature of childhood, and about the developmental processes that are particularly basic and relevant for optimum growth and behavior of young children (Dowley & Bromwich, 1972).

A program's effectiveness depends on how appropriate it is to the child's developmental level and whether or not the experiences it provides will supplement rather than duplicate those he is receiving elsewhere. It is necessary, as Nicholas Awastasiow notes, to match the Early Child Development Programs to the childbearing practices of the family and the child's level of development, in this way he maintains that the probability that learning will take place will be maximized. Additionally, program developers should look at day care within the context of the kinds of services children need to grow and develop. Careful and thoughtful attention should be given to where

the child is coming from and what his requirements are for optimum growth. Georgia McMurray (1976) in discussing day care program planning believes that a major obstacle to effective programming is its lack on continuity and future orientation.

We talk about day care in isolation, as if it is unrelated to elementary and higher levels of education, health and social services. Instead we seem to operate very narrowly, programming our day care and early childhood programs in accordance with current day-to-day activities. (p. 27)

She maintains that this makes the plans for such programs restrictive and narrow in scope.

We must find a way to refocus attention on a longitudinal, developmental approach to early childhood programming. We need to take a good long and close look at what we're doing and determine whether the program is taking the child anywhere in relation to both his past and future.

In this respect any program planning for young children must consider the real and significant differences among children from different ethnic, cultural and economic groups. The values which the group holds must be supported. Bruner reminds us, however, that it is essential to remember that there are stages in development regardless of individual or cultural conditions that move forward. That "there is a universality of human culture, which is observable in all society and classes of children. They are: curiosity, play, playfulness, and anticipation" (Bruner, 1970). The fostering of these characteristics should be incorporated in planning programs for children in all developmental levels.



Over a decade ago, J. McVickers Hunt (1961) posed the problem of the match in describing the connection between the child's intellectual organization and the teaching environment. Thus, giving importance to educational programs which support the developmental trend in children.

#### SUMMARY

Accumulating evidence suggests that parents have a great amount of influence upon the behavior and development of their children, especially their cognitive and academic achievement. Also, programs which teach parents skills in educating their children can be effective supplements or alternatives to pre-school education. However, the pervasive conditions of poverty under which more than 17 million children in America exist, does not allow their families to provide adequately for their development. This condition as well as the fact that more than 6½ million children under the age of six have mothers who work or study full-time mandates the need for more comprehensive and developmental day care programs.

Parent education and other supportive systems for family care should be a part of the day care center program, but this system must be flexible and include a variety of arrangements geared to variable schedules and needs of parents. In addition to meeting these needs the program should account for the general development trends in children in order to make the curriculum meaningful and helpful for the total life of the child.



## CHAPTER III

### Procedures

This chapter contains a detailed discussion of the procedures used for this investigation.

1. The Development of the Parents Curriculum Guide
2. Development of the Needs Assessment and Questionnaire
3. Development of Assessment Measurements
4. Description of the Training Program
5. Description of the Assessment Procedure

### Parent Curriculum Guide

This guide was developed in conjunction with the day care center's educational consultant. Emphasis was placed on the construction of knowledge through the use of problem solving processes. The Guide presented a variety of activities for parents to use to assist their children to explore and discover relationships in their environment through observing, questioning and listening. Problematic situations were a part of the activities that the child was motivated to solve through the process of relating events and objects and discovering similarities and differences. The curriculum emphasized the use of action schemas by manipulating objects and using this information to construct new relationships and new knowledge. Activities focused on problems that helped the child become aware of relationships using concepts of time, space and causality. For example, mothers were

encouraged to engage in activities with their children as many times as possible—when preparing dinner, watching television, reading, etc.—and to:

Take objects such as buttons, peas, toothpicks, paper clips, stones, and ask your child: Will you arrange these things into several groups from one to ten? How does each group differ from the one before and the one after? (Your child may count each thing in each grouping and determine that the objects will differ on the basis of one; your child may categorize the groups on the basis of some characteristic of the objects, for example, putting all things of wood into groups; however, the child will begin to discover that in each grouping from one through ten the difference between each group is that it is one less than the one after and one more than the one before—and that this difference doesn't depend on what objects are used in the groups.)

The parents were instructed in the Guide to create at least two activities to do with their children at home each week. There was an evaluation form which parents were requested to utilize to assess the effectiveness of these activities. This was done for the purpose of motivating the parents as well as having some method for evaluating the parents use of the Guide. Most of the activities described problematic situations that would be common in homes and neighborhood; by doing these, parents would become more aware of other times and events where they could pose problems for their children, helping them to construct new knowledge.

#### Development of Parent Questionnaire and Needs Assessment

This questionnaire and needs assessment was developed in order to assess what parents felt were their greatest need in the area of

child rearing and child development, with their kindergarten aged children. The questionnaire was based on a survey used by Harvard Preschool Project (Watts et al., 1973).

Parents were asked to rate themselves on their skills in working with their children in the following areas:

1. Their knowledge of child development patterns.
2. Their skills in creative expression.
3. Their use of positive approaches to disciplining their child.
4. Specific child rearing methods.

Also surveyed were questions related to the frequency of certain interactions parents had with their children, for example:

1. How often do you and your child go shopping?
2. How often does your child watch television?
3. How often do you watch television with your child? What programs do you watch? Do you and your child discuss the programs before or after viewing them?
4. Does your child talk a great deal to you?
5. Are you trying to develop certain social skills in your child?

In general, what qualities are you trying to develop? How are you doing this?

The information obtained from the survey enabled the program developer to specify the area of concentration for the training program. The broad category of problem solving was decided on since it was developmentally based, incorporated the concerns of parents as assessed by the questionnaire, and because it covered a range of abilities that were helpful for adaptation in many situations.

At each training session, the weekly behavioral goals were discussed in detail. Parents participated in specific activities to reinforce the goals set forth. For example, mothers worked directly with the child to reinforce concepts learned in small group meetings with other parents, also home work assignments from the previous week were reviewed and evaluated.

#### Description of Assessment Procedures

In order to ascertain the effectiveness of the treatment, it had to be decided what factors in the parent's behavior were altered as a result of the treatment. Since the major goals were to effect their problem solving abilities and to become aware of how to use and increase their children's abilities, the pre- and post-evaluative measurements tested for these specific abilities. The two measures were administered for the pre-assessment and for the post-assessment to determine the amount of change in parent's behaviors.

The pre-training assessment was administered in April and the post-training in August. A Saturday was selected and parents and their children came to the day care center at different time periods of two hours each. During this period the assessment measures were administered. Prior to the two assessment sessions, a selected group of staff from the day care center were chosen to set up the testing situation and to rate the behavior of parents and children. These staff individuals were trained for the rating process, and the same individuals were used for the pre- and post-assessment.

It has been *hypothesized* that the goal of increasing parents and children's problem solving behaviors could be obtained in a



training program operated at the day care center site, and that this goal would be observable through an increase of problem solving behaviors. These behaviors were assessed through the "What Would You Do?" Questionnaire and the Parent-Child Problem Solving Encounters Test.

Chapter IV will present an analysis of the data derived from the two measurements to assess for the degree of this hypothesis.

#### Development of Assessment Measurement "What Would You Do?" Questionnaire

The purpose of the questionnaire was to assess the ability of parents to choose a solution which provided the most opportunities to utilize the seven problem solving behaviors. Out of a group of three choices one was the best for it utilized more of the behaviors for solution to a problem. If the parents chose the best solution (incorporated more problem solving behaviors), they were given 8 points, 7 points for the second best alternative and 6 points for the third. The What Would You Do Questionnaire had fifteen common activities that would occur in the home and that described a problematic situation which the parent or parent-child dyad could solve in several different ways. After reading the situation, the parents were to choose one of the three alternatives for resolving the conflict.

#### Parent-Child Problem Solving Encounters Assessment

Since no existing assessment of parent-child interaction in problem solving situations could be found, a measurement scale had to be developed to assess how the parent-child dyad utilized the seven behaviors.



The design was based upon six different play activities often found in pre-school centers. A rating scale which assessed the number of questions asked plus the number of minutes spent in observing before beginning that activity, was developed.

The six play areas were art table, balloon table, sand and water tables, sacks and letters and blocks. Eight trained raters observed each mother and child and rated them (see Appendix E ).

The format used for the problem solving encounters included six mother-child dyads in one of the six activity centers for a period of fifteen minutes with rotation to a new activity until all six activity areas had been completed. A rating scale was used to assess behaviors at each area. The purpose of the rating scale was to standardize an observation and to secure a quantitative appraisal. Possible questions which parents and children asked one another while interacting in the problem solving encounters were listed. If asked, Yes-No Column was marked. Other questions were listed and rated in terms of their reflection of the problem solving process used in the training. For each encounter, the number of questions asked were totalled for each parent child dyad.

#### The Description of the Training Program

Each week parents participated in a small group training class which was held at various times during the day, the noon hour, after noon, and evening sessions. These classes were taught by the trainer and an assistant who was a member of the teaching staff. Each class session covered different objectives, for example, the objective for the first class session was to introduce the concepts to be covered

during the entire training—the seven behavioral objectives listed below.

The lessons consisted of the use of lectures, discussions, role playing and child and parent verbal interaction around activities that foster skills of observation questioning and listening. These were based directly on the seven behavioral objectives defined as goals of the training program. The seven goals were:

1. Parents and children will learn to increase their observational skills.

Parents were helped to learn techniques towards the development of observation, that is, observation for understanding. This objective was defined as being aware of the situation where the behavior is occurring in order to ascertain why the child responds in that manner.

2. Parents and children will learn to increase their ability to ask questions.

Emphasis was placed on the importance of asking the kind of questions which will help the parent to understand what the child is thinking. Parents will also be helped to know how items and events in the home situation can be used for children's problem solving.

3. Parents and children will learn to use language (speaking and listening) around the skills of relating comparing and organizing activities.

Parents were trained to use words to refer to what the child is doing and playing, words which describe their actions when doing something. They are also helped to model linguistic patterns simultaneously with the action patterns.

4. Parents and children will learn to increase their skills to relate and compare things and events in daily environment.

Parents were helped to understand that comparing and relating are significant procedures in problem solving and that they are a special kind of observation. Comparing means examining two or more experiences and thinking about the properties as to how they are similar and how they differ. Relating is showing the relationship between the two.

i.e. In examining a *piece* of *string* and a *rubber band* children can be asked to tell how they are similar—how different, or how they can be used.

5. Parents and children will learn to understand each other's perspective and way of viewing a problem situation.

Parents are trained to assist their child in improving their problem solving abilities by: knowing how he/she thinks, at what level they can relate things to each other, think of alternatives and know what can or cannot be changed. With this kind of information, the parent will understand that many times a child's responses are not wrong but based on how he/she perceives and understands a situation which they learn (from observation) was quite different from how they (the parents) perceive and understand many situations.

6. Parents and children will learn to make choices on the basis of concrete evidence and give a logical (rational reason for that choice).

Through a variety of activities parents are trained to understand why they should help their children base the choices on what is real and concrete. This is easier for a child to understand and when based on that factor, children are more apt to make correct choices. Parents were shown the importance of helping the child verbalize the reasons for making a certain choice.

7. Parents and children will learn to consider alternative answers and solutions to problems.

In this behavior, parents are shown that there is usually more than one manner of doing something, and the way to find out what is best is the process of relating each solution to the problem and thinking about or acting out the consequences of using that solution.

The major instruments of treatment were the three training class sessions and the monthly home visits. The goal of the training classes was the emphasis upon the basic concepts of problem solving—keen observation, listening and questioning through an understanding of the seven behavioral goals. Besides those, mothers were shown through modelling, the kinds of behavior that fosters the type of relationship with her child that leads to optimum learning. She was also encouraged to verbally interact often with her child around interesting activities, i.e. (those found in the home Curriculum Guide) to give good explanations and to show approval of the child's efforts (Levenstein, 1972a).

Strongly related in importance to the class sessions were the monthly home visits made by the trainer. It was on those occasions that the mother and child were observed working on problem solving activities from the Curriculum Guide. The trainer answered questions, showed modelling behavior to reinforce learnings.



## C H A P T E R   I V

### Analysis of the Data

This dissertation was a study of the effectiveness of a four month training program for the development of parents and children's problem solving abilities.

Thirteen of the nineteen parents enrolled in the training program did not complete the full session. Their reasons for dropping out and how this relates to those who remained is one issue to be discussed, also, what implications this may have for parent-education in day care centers where parents were working or attending school on a full time basis. Two sources of information will be scrutinized in an attempt to understand the unique factors which influenced the decision of these mothers (Demographic Data and a post-training Telephone Interview). At the same time this source will give some indication of why the six mothers were able to complete the training with evident gains.

From this data analysis some issues will be focused on in the final chapter of this dissertation and will include a discussion of why some parents did not complete the program, why other mothers were able to complete it, and what factors seem to be related to both groups. This discussion will help provide information on development and effectiveness of parent education programs for day care centers where parents are either working or going to school full time.



### Demographic Data

The demographic data on the two groups of mothers who comprised the studies population—Group I (completed training) and Group II (did not complete full training)—is shown in Table 1. An analysis of this data reveals that the educational level of the mothers who completed training to be higher than those who did not. In fact, all mothers from Group I had had at least one year of college, whereas, eleven of thirteen Group II mothers, were high school graduates. It is possible that Group I mothers from their college experiences had developed some positive patterns of response to meeting class schedules, home work assignments and general teacher expectations.

Four of the mothers from Group I had husbands in the home, which meant that presumably, they had additional help in the form of babysitters and transportation assistance. At least one mother received encouragement from her spouse in achieving the training goal. (He attended two of the class sessions with her.)

In Group II, only four of the thirteen families had fathers present in the home. The other nine were single females who were heads of households.

In regard to the income level of the two groups, four Group I families reported income at \$10,000. Two were paying tuition to the day care center. No families in Group II had incomes that high. The housing status also showed a variance between the two groups. Five of the families in Group I were buying their own homes, whereas, in Group II, ten of the thirteen parents rented and lived in apartments. Three mothers in Group II were currently on welfare.

Table 1  
Demographic Data Group I—Group II

| (6) Parents who completed training     |   | (13) Parents who dropped out of Parent training |    |
|--|---|---|----|
| A. Family Characteristic               |   | A. Family Characteristics                       |    |
| Intact Family                          | 4 | Intact Family                                   | 4  |
| Single Parent                          | 2 | Single Parent                                   | 9  |
| B. Employment Status                   |   | B. Employment Status                            |    |
| Working                                | 4 | Working   | 10 |
| Student                                | 2 | Student   | 0  |
| Other                                  | 0 | Case Work*                                      | 1  |
|  |   | Other   | 2  |
| C. Number of Children in Family        |   | C. Number of Children in Family                 |    |
| 2                                      | 3 | 7   | 2  |
| 3                                      | 2 | 2   | 3  |
| 3                                      | 1 | 4   | 1  |
| D. Educational Level<br>(# of mothers) |   | D. Educational Level                            |    |
| 3 yrs. College                         | 1 | High School                                     | 11 |
| 2 yrs. College                         | 2 | B.S. Degree                                     | 1  |
| 1 yr. College                          | 3 | 1 yr. College                                   | 1  |
| E. Housing Status                      |   | E. Housing Status                               |    |
| Rents                                  | 1 | Rents   | 10 |
| Own Home                               | 5 | Own Home  | 3  |
| F. Socio-Econ. Level                   |   | F. Socio-Econ. Level                            |    |
| \$10,000-above                         | 4 | \$10,000-above                                  | 0  |
| \$6000-\$8500                          | 2 | \$6000-\$8500                                   | 10 |
|  |   | Below \$6000                                    | 3  |
|  |   | Welfare**                                       |    |

\*Work status deferred because of medical need of child or parent.

\*\*Receiving welfare subsidies.

This information shows that all of the mothers in Group I were not as solid economically disadvantaged as those in Group II. Their circumstances often were reported to be unstable, with husbands periodically "laid off" from work, causing their incomes to plummet well below the \$10,000 figure that they reported. Even though there were four intact families as part of Group II, all families in Group II had incomes under \$7500 including the nine women heads of households in the same group.

Therefore, this demographic information does indicate that the Group I mothers were living in "better" circumstances, and had more education than mothers in Group II. These differences may be related to the fact that Group I mothers stayed in the program, however, the differences are not great enough, nor is there information of what these differences meant in terms of daily living. Also, the groups are not large enough to suggest that demographic circumstances were the main factors for the differences in participation. It was important to add to this demographic information more data that could be compared with it, and then with the participation differences of the two groups for determining important relationships.

#### Post-Training Telephone Interview

The problem of finding answers to the question of why parents dropped out of the Training Program seemed best answered by asking them directly. Consequently, it was decided to develop a questionnaire and to find a neutral person (preferably a parent who had completed the training) to make the interviews via telephone. It was also felt that a similar inquiry should be made to mothers who

completed the training in order to make a comparative assessment of the two groups.

The following questions were put to the thirteen mothers in Group II (those who did not complete the training).

1. Why did you drop out of the training program?
2. Did the political climate at the center (controversy between parents and board) effect your decision?
3. Did you benefit in any way from your limited involvement in the training program? Specify.
4. Did the trainer visit your home to observe you and your child engaging in activities from the Curriculum Guide? How beneficial was the session to you and your child?
5. Explain the ways this program could have been made more interesting and/or meaningful to you.
6. Under what conditions could you have completed the training program?
7. What would you have changed regarding the training program to have motivated you to have completed the program?
8. What do you recall as being the most interesting feature or component of the training?

Parents who completed four months training program were asked the following set of questions by the telephone interviewer.

1. Why did you decide to participate in the parent training program in problem solving? Were you satisfied with the results? Please explain in what ways.
2. Were you able to develop any additional insights or skills as a result of your participation in the P.T.P.? Please specify.

3. Discuss how these skills helped you to become a more effective parent—more effective teacher of your child.
4. Explain how often and under what circumstances you utilized the Home Curriculum Guide with your child.
5. What motivated you to continue as a participant in the training program?
6. In what ways do you think that the political climate at the Early Childhood Centers (Parents vs Board) interfered with the training program.
7. Even though you completed the training, it was often difficult for you to attend all the scheduled sessions. What would you recommend should be done in the future to get sustained participation and attendance in parent training programs?
8. Specify in what ways the training program could have been made more meaningful—more interesting?

Discussion of the Telephone Interview  
as Shown in Table 2

The Post-Training Telephone Interview proved to be a revealing factor in assessing why some mothers dropped out of the training. It seems that there was no *one* major reason, however, the fact that there were numerous and varied causes, some positive, some negative, might indicate that the mothers were under resourced—lacked the ability to find alternative solutions.



Telephone Interview—Post-Training

Table 2

GROUP I (Parents who completed training)

GROUP II (Parents who did not complete training)

- |   |   |
|---|---|
| <p>1. Did you benefit from your participation in the PTP?<br/> <u>6</u> Yes      <u>    </u> No      <u>    </u> Somewhat</p> <p>2. Did you and your child enjoy the home visits?<br/> <u>6</u> Yes      <u>    </u> No      <u>    </u> Somewhat</p> <p>3. Do you think the political climate of the Center interfered with the training Program?<br/> <u>1</u> Not at all      <u>2</u> Little negative effect<br/> <u>    </u> <u>3</u> A great deal</p> <p>4. How would the PTP have been made more interesting?<br/> <u>3</u> No way      <u>1</u> Different time<br/> <u>1</u> More Family participation<br/> <u>1</u> More staff participation</p> <p>5. How often do you use the Curriculum Guide?<br/> <u>4</u> Often      <u>2</u> Seldom      <u>    </u> Not at all</p> | <p>1. Did you benefit from your participation in the PTP?<br/> <u>8</u> Yes      <u>3</u> No      <u>2</u> Somewhat</p> <p>2. Did you and your child enjoy the home visits?<br/> <u>4</u> Yes      <u>3</u> No      <u>6</u> Didn't have any</p> <p>3. Did the political climate at the Center (Parent vs Board) influence your decision to drop out?<br/> <u>1</u> Yes      <u>12</u> No</p> <p>4. Why did you drop out?<br/> <u>2</u> Sick      <u>5</u> Difficult work schedule<br/> <u>4</u> Not interested      <u>1</u> Moved      <u>1</u> Vacation<br/> List other reasons:</p> <p>5. How could the parent training program have been made more interesting?<br/> <u>5</u> Very good needed no changes<br/> <u>2</u> Another time<br/> <u>2</u> More challenging curriculum<br/> <u>4</u> Longer hours, more home visits</p> <p>6. How often do you use the Curriculum Guide?<br/> <u>8</u> Didn't receive one<br/> <u>5</u> Use it often</p> |
|---|---|

All of the six Group I mothers who completed the training stated that they felt it was beneficial to them in their roles as parents and teachers of their children. They also stated that both they and their children enjoyed the sessions and activities and felt that they had learned to better understand how their children thought in problem situations. Seven mothers in Group II said that even though they had only limited involvement, they felt that they had definitely gained new insights in the importance of observation and questioning abilities. Three stated that they gained somewhat in this area and three flatly stated that they had not learned anything which was beneficial to them.

There was unanimous agreement among the six Group I mothers that the training had taught them better communication skills. They also mentioned that they were more observant, better listeners and asked more thoughtful questions more frequently when conversing with their children.

When Group I mothers were asked how the program could have been changed to have become more interesting, four felt it was adequate and needed no changes. One parent suggested more involvement of other siblings in the family, another stated that the kindergarten teachers could have been more integrally involved. Group II mothers were asked the same question. Five stated that they felt it had been interesting and did not need changing, and two felt that the curriculum could have been more challenging for kindergarten children. One mother expressed the desire to have had more emphasis placed on home visits—that they should have been longer and more frequent.

The question was asked of Group II mothers whether the political atmosphere at the center had influenced their decision not to continue in the training program. Twelve said "no," and one parent said "yes," she felt that the training program was being used as a sounding board to influence parents.

When Group I mothers were asked if they felt the climate at the center had adversely influenced the participation of the other parents, three felt it had greatly affected them, two felt it had limited effect and only one felt it had *no* effect.

Mothers in Group II were questioned as to why they had dropped out. There were a wide variety of responses. Five stated that they tried to attend the training sessions, but that their work schedules were such that they simply could not get home from work, accomplish family responsibilities and make the training class. One mother stated that she was experiencing personal problems. Another was hospitalized with an emergency operation. Two stated unequivocally that they were just not interested in trying to change themselves, one saying, "I am too old to change my ways of dealing with my children!" The other mother stated, "My child, has been going to this center for three years. If she hasn't learned enough to get through public school by now, there is nothing I can do!" Finally, two mothers were sending their children somewhere for vacations and two had transportation problems.

Both groups were asked if they still used the curriculum guide with their children. Five mothers in Group I stated that they used it on a regular basis in conjunction with homework and family activities.

One other stated she made up problem solving activities similar to those in the guide. Of the five parents in Group II who had received the Curriculum Guide, four were still using it. One had finished all the activities with her child and given it to her sister to use with her children. The other eight parents had not received a Guide because they stopped regular attendance in the training program.

#### What Would You Do Questionnaire

This test was designed to measure parents ability to choose the correct solution for some simple activities that they could engage in with their children around the home. They were to choose one of three possible answers, the correct one included one or more of the seven specific problem solving behaviors. The answers to each of the fifteen questions were weighted in terms of the amount of problem solving behavior, they recieved eight points, the next response received seven points and the third alternative, for example, the one with the least amount of problem solving behavior received six points.

Table 3 gives raw scores for the Pre- and Post- "What Would You Do?" Questionnaire and the rank ordering for each participant.

#### Discussion

For three children, HL, FO, and NE, their rank ordering in terms of the total number of questions asked, pre- and post-training, remained the same. The other three's ranking changed with JE dropping from fourth to fifth place pre- and post-. NE dropped from third to fourth place, pre- and post-, and HA sixth to third place, pre- and post-. It is difficult to determine the individual effects versus

Table 3  
What Would You Do Questionnaire

| Pre-Test |    | Raw Scores | Post-Test |     | Amount of Change<br>Rank Ordering |        |
|----------|----|------------|-----------|-----|-----------------------------------|--------|
| JE       | 71 |            | WE        | 100 | JE                                | 21 + 6 |
| FO       | 42 |            | JE        | 92  | WE                                | 61 + 2 |
| WE       | 39 |            | HA        | 88  | FO                                | 24 + 5 |
| JO       | 31 |            | HO        | 80  | JO                                | 37 + 4 |
| HO       | 24 |            | JO        | 68  | HO                                | 56 + 3 |
| HA       | 24 |            | FO        | 66  | HA                                | 64 + 1 |

A score of 120 is the best possible for this test, i.e., a person could receive 8 points for each of the 15 questions.



the training program from this rank ordering. By comparing the rank ordering of amount of change scores, it appears that the training program was most important, for three of the children, since HA, the child with the least number of questions asked (pre-testing) became third highest on the post-testing. For the amount of change, JO, who was ranked fifth in the total number of questions asked pre- and post-training, was in second place for the amount of change rank ordering and NE who was third and fourth for the total number was third for the amount of change. For the other children, their amount of change was not as great, although they asked more questions, pre- and post-. Therefore, there is some evidence for individual effects by comparing the rank ordering on amounts of change for mothers and children. It appears that there is more consistency between the two ranks, and therefore more evidence that the program had a greater effect.

Mothers and children NE and JO, remained in the top half. Mothers and children, FO, and HO remained in the bottom half. Mother and children, HA and JE changed their relative positions.

This data also offered some evidence to indicate what *Effect the Situation* (i.e., the testing environment) might have had on the mother's and children's question asking behaviors. The analysis of the rank ordering indicated that the training program had a greater effect than both individual differences and the situation.

The rank ordering of number of seconds spent in observing was not done since this variable proved to be more difficult to measure and therefore less reliable. Although the analysis of pre-/post-scores did show a positive change.

Appendix I presents a further analysis of the Parent/Child Problem Solving Encounters. A rank ordering of mothers' and children's number of questions asked pre- and post-testing and the amount of change are presented in order to determine if those individual mothers and children who asked the least number of questions are the same mothers and children who asked the least number of questions on the post-assessment.

Table 4 shows that for all the mothers, as a group and individually, there was a significant difference in the scores they received on the questionnaire, thus indicating that the Training and Curriculum Guide had positive effects. The analysis of rank ordering of raw scores, pre- and post-training, does not clearly suggest that either the program or individual differences had a greater effect. By comparing the rank ordering of the change scores with the rank ordering of the post-training scores, there is more indication that the training program had a greater effect than individual differences, since the relative rankings remain almost the same for five of the six mothers. However, since the amount of the scores received changed from pre- and post-training, especially for four mothers, it appears very significant. There is evidence that the training program and Curriculum Guide had the most positive effect.

In reflecting upon the varied reasons parents in Group II gave for dropping out of the training program before its completion, it appears that some of them are similar to the problems of this type of the population. Group II represented a lower socio-economic level of economically disadvantaged parents whose children attended the day

Table 4  
 Children's Pre- and Post-Questioning Scores

| Pre-Test | Post-Test | Amount of Change | Rank Ordering |
|----------|-----------|------------------|---------------|
| HO - 17  | HO - 24   | 7+               | 1. HA - 19+   |
| FO - 12  | FO - 22   | 10+              | 2. JO - 13+   |
| NE - 8   | NE - 17   | 12+              | 3. NE - 12+   |
| JE - 4   | JE - 15   | 11+              | 4. JE - 11+   |
| JO - 3   | JO - 16   | 13+              | 5. FO - 10+   |
| HA - 1   | HA - 20   | 19+              | 6. HO - 7+    |

care center. Many of their responses reflected prototype behavior typical of lower socio-economic members. For example, they may not have had adequate opportunities to develop a positive self-image, nor they may not have appreciated the objectives of the program or what it may have led to in other areas of their lives. It has been suggested that poor people sometimes need concrete rewards to reinforce their ability to achieve a goal, and to sustain interest. Merle Karnes (1969a), recognized this and offered incentives to low income mothers who would participate in her mother's training program. This incentive was \$1.50 per hour for baby sitter costs and transportation.

The findings of researchers Morans and Lourie (1967) which showed that there was a wide variation in the ability of poor mothers to cope with the depressive inadequacies of their existence, so as to positively effect the children's learning, supports some of the findings from the Telephone Interview and Demographic Data. It is possible that Group II mothers reached a higher level of frustration with their additional responsibilities of attending a Training Program, plus the burdens of being the head of a household and managing on insufficient incomes. Morans and Lourie (1967) showed this in their data. Also, since the dropout time was different for each mother in Group II, there is some indication that stress due to situational factors affected their participation, since individuals in general, respond differently to stress factors.

### Summary

The analysis of the data gathered from the two assessments for the six mothers and children who completed the program indicated that the training at the day care center, the home visitations and the parent's use of the Curriculum Guide had a positive effect on the mothers and children's problem solving behavior. The analysis does not indicate which factor was most effective, for example, the training, or the home visitation, or the Curriculum Guide.

To *conclude*, the analysis of the information of those mothers and children who completed the program and of those who did not complete the training was more related to their *socio-economic* and *family conditions* than to the program itself. This conclusion is supported by the data showing the changes for those mothers and children who did complete the program since these differences were great. Also, mothers in both groups reported that they enjoyed the initial training sessions in the day care center and the use of the Curriculum Guide. Therefore, there is evidence to suggest that the Training Program and the Curriculum Guide are effective for some socio-economic disadvantaged mothers who are enrolled in government supported day care centers and who are working and attending school full time.



## CHAPTER V

### SUMMARY, DISCUSSION AND IMPLICATIONS

This chapter will present a summary discussion of several features of the study and will attempt to draw some conclusions regarding parent-education programs for day care centers for socio-economic disadvantaged parents.

#### Review of the Study

Nineteen parents of children attending kindergarten class participated in this Parent Education Training Program. Thirteen completed only a portion of the program, failing to complete the post evaluation assessment. Six mothers and their kindergarten age children completed the parent education program. The analysis of the evaluation data was presented in the preceding chapter. At this time, it seems appropriate to review the main goals and format of the training program. Parents and children who completed the program showed positive gains in the development of problem-solving behaviors; also some of the parents who completed only a portion of the program indicated that they considered their partial involvement to have been effective.

It was felt by the program developer that problem solving was a significant area of concentration, because it is developmentally based and because these behaviors encompass the specific concerns raised by parents in the Needs Assessment, and cover a wide range of

both cognitive and affective skills. The format of the program consisted of three small group training classes. These were held at the kindergarten classroom at the day care center over a three week period and followed by three monthly home visits. A Parent Curriculum Guide consisting of approximately fifty problem-solving activities was given to parents as well as homework assignments and evaluation forms.

The goal of the program was for parents and their children to acquire seven specific problem solving behaviors which were:

1. Learning to increase their observational skills.
2. Learning to ask new and different kinds of questions.
3. Learning to use language behaviors for relating, comparing and organizing objects and events.
4. Learning to increase their skills to relate and compare things and events in their daily environments by solving problems.
5. Learning to better understand each other's perspective and way of viewing a problem situation.
6. Learning to make better choices on the basis of concrete evidence.
7. Learning to consider alternative answers and solutions to problems.

This educational intervention program presented in three weekly sessions consisted of lectures, role playing, modeling behaviors, interaction between mothers and children in their classroom around problem solving activities and group discussions. All seven of the

defined behavioral goals were covered during this period. Parents were given the Curriculum Guide to utilize over the next three months. Homework assignments from the Curriculum Guide were distributed; the evaluation forms were returned to the kindergarten teacher and the trainer on a weekly basis.

Monthly home visits were made to assess the progress of parents and children around activities in the Curriculum Guide. As a result of this four month training program, six mothers and their children showed positive gains in their problem solving behaviors. This evidence indicated that the study achieved limited success. Some of the thirteen parents who completed partial amounts of the training program also benefited as many concluded in the Post-Training Telephone Interview. Therefore, the training format and the content of training, for example, the focus of problem solving behaviors, seems to be relevant for parents of young children. It will be worthwhile to test the particular program in the day care situation to determine how effective it can be in relation to other demographic and situational factors that characterize parents in day care programs.

#### A Comparison of Four Outstanding Parent Intervention

##### Programs With This Research Study

Several researchers have attempted to determine how the child's response to *intervention* was influenced by the degree of deprivation of his family. Herzog and colleagues (1972a, 1972b) studied children from disadvantaged families who were enrolled in intervention programs. She attempted to isolate the variables which would differentiate the *levels of deprivation* within this relatively homogeneous group. She

found two factors which she believed made a difference: the number of years of education of the mother, and the ratio of persons per room in the home. Herzog found that children in the less deprived group gained more from the program, and retained it longer. She reported these findings in a paper entitled, "The Less They Have, The Less They Learn" (1972a, 1972b). This concept by Herzog is supported by the results of the four well-known parent intervention projects sited below, as well as, the outcome of this research study.

Phyllis Levenstein's successful study had a sample which was less disadvantaged than that of Karnes', Gray's or Weikart's. The average education of parents in her project was eleventh grade. However, in one of her control groups, those children who attained the highest increase in IQ were from families where none of the fathers were absent from the home, all of the mothers had finished high school, the size of the families were small, and none of the families were on welfare. Whereas, in Gray's Study, the families selected did not possess any of the above characteristics. Consequently, the gains in children's IQ's were much lower, which again supports Herzog's thesis.

Looking at the results of this study may also lend support. All Group II mothers (did not complete the program) in comparison to Group I mothers (completed the program) had lower incomes—under \$7500. Nine families had no fathers present and three were on welfare. These social and motivational characteristics of deprivation in response to this intervention study tended to support the theory, The Less They Have, The Less They Learn.



Merle Karnes' sample was more economically disadvantaged than Levenstein's, however, she introduced a variable which may have helped sustain the interest of her mothers, thus allowing for her project to succeed. She provided them incentives in the form of a stipend of \$1.50 per hour to attend the class sessions. The emphasis of her curriculum, like Levenstein's, Gray's and Weikart's, was on guided involvement of the mother and child dyad as an interactive system around cognitively structured activities.

#### Curriculum Emphasis

In the studies of group intervention projects by Gray and Weikart, (1968, 1970), both had samples from extremely deprived families, however, the emphasis was away from the parent as primary agent of intervention, and on the group pre-school program. This shift was even more pronounced in Weikart's Study where the home visitor's role was defined as the expert tutor—thus de-emphasizing the importance of the mother and her role of educator of her child. This, in combination with the fact that the samples were very disadvantaged, may well be why the children of Gray's and Weikart's projects failed to attain the level of gains as in Levenstein's and Karnes'.

The curriculum of this experimental program which stressed the development of enduring relationship between mother and child around cognitively challenging tasks proved to be beneficial to all Group I parents and children as shown by the evaluative data of this study. However, the parents in Group II of this study differed from the sample in the four experimental programs described above for they were



full day care parents who were working or going to school full time. This factor complicated the implementation of a parent education program. Also, the fact that certain of these parents (Group II) were less able to cope with their oppressive environment, because they were under additional stress (sole heads of households, working eight hours per day, and living on poverty level incomes) further compounded the implementation of the program.

Results from this study imply that an intensive parent education component as part of the day care center program will be a difficult, but not impossible feat to implement, for structured programs of this nature require stamina, motivation and commitment on the part of parents who are enrolled. These characteristics may well be the very ones that many disadvantaged parents do not have.

The researchers knowledge of the families involved, plus the results of evaluative data have allowed her to draw certain conclusions about parent training programs in day care centers. They are:

1. Parent education—although beneficial—should not be considered in terms of a monolithic concept that can or should be prescribed for all parents in an economically disadvantaged population. Just as in the middle class sector, some parents need and will benefit from parent education, others will not.
2. Participation in Parent Education Programs must be a self selected procedure in order to succeed. Motivation in terms of interest and attitude is a high predictor of success.

3. Parents who are in the lowest level of economic deprivation have needs which are environmental in nature. Placing emphasis upon an educational training can be counter-productive until families' basic needs for security are met.
4. Programs for economically disadvantaged day care parents must take into account the varied pressures which effect their lives and place limits on the time and energy.

### Conclusion

Results from this research study indicated that the objectives for the training program for parents and children were valid, and that in combination with certain socio-economic circumstances, participatory parents can reach these objectives. However, this study also showed that although the training format and content of the training may be valid, it is not appropriate for all parents. It appears that parents with low incomes who are mothers, single heads of households, and particularly minority members, have more situational stress that can prevent them from successfully completing the program.

In addition, parents whose children are enrolled in government financed (usually Title XX) day care programs may have other complications because of the eligibility requirements. The right of their children to attend fully subsidized day care is directly dependent upon parent's work status or economic status (must be poverty level making under (7500 per year for a family of four). They must be employed, in school or in training programs leading towards employment. As a consequence most day care parents may have less time to devote to

educational goals for their children and themselves, even if they are aware of the possible benefits and have the interest to attend. When parents are employed or attending school full time, their schedules often do not allow them enough time to complete a long-term parent training program.

To conclude, the parent-training program which was researched in this dissertation was designed for a day care center's group of parents and children for increasing and utilizing their problem solving behaviors. This training program could be considered neither a success nor a failure. Six mothers out of the sample of nineteen successfully completed the training, and the evaluative data showed that for all of them their problem solving behavior significantly improved. In addition, even though the other thirteen parents did not complete the training, a few of them indicated in the Telephone Interview, that they benefited from the limited training sessions, home visits and Parent Curriculum Guide. This study did show that in addition to a meaningful curriculum and training procedure, a parent education program has to adapt more to the individual circumstances of the families enrolled. This finding has been indicated in a number of studies on parent education and involvement. Whether a program can ever be developed that has valid objectives, as well as meeting the varied unique circumstances of families is a major question. This research, however, given the findings of this study is in a much better position to continue to work on solving this problem.

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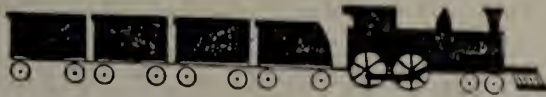


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*Mrs. Lucile H. Layton*  
 Exec. Director

- Dear Parents:

We have encouraged and usually had a good level of parent participation at the Early Childhood Centers of Greater Springfield, Inc. We know that many parents are already highly involved with their children's development. However, often they are not very knowledgeable about the most effective ways to help in their child's learning.

We realize that the needs of parents are not similar. We would like to make a careful assessment of your specific needs and interest in this area. Based on this information, we will then be able to set up a Pilot Program in Parent Education designed specifically for you parents of our kindergarten children at this center.

Will you please take the next few minutes here with us to carefully answer the questions in the questionnaire. We will be here to assist you in whatever way you may need.

Sincerely,

Lucile H. Layton  
 Executive Director

LHL/ej

PARENT QUESTIONNAIRE & NEEDS ASSESSMENT

Name:

Address:

Name of your child in kindergarten at Early Childhood:

Date of Birth:

How long has your child attended Early Childhood?



1. About how often do you take your child along with you when you go shopping?
  - daily
  - weekly
  - monthly
  - less than once a month
  - never
  
2. About how often do you talk to your child about things he/she has seen on TV?
  - daily
  - weekly
  - monthly
  - less than once a month
  - never
  
3. If your child asks you a question you can't answer, about how often do you try to find the answer by looking in a book?
  - Always
  - Usually
  - Once in a while
  - Not often
  - Never
  
4. About how much do you talk to your child at meal time?
  - A great deal
  - Once a month
  - Some
  - Just a little
  - Not much
  
5. About how often do you take your child on a trip out of town?
  - Once a week
  - Once a month
  - A few times a year
  - Less than once a year
  - Never

6. When your child has a chance to choose what to do around the house, about how often does he/she choose to look at a book or magazine?

- Almost every day
- Often
- Once in a while
- Seldom
- Never

7. Do you and your child look at books together?

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8. If this a regular part of your schedule?

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How long a session?

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9. Do you feel this is important to your child's learning?

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---



---

10. Do you read the story to your child or is it mostly looking at pictures?

---



---

11. Is your child trying to learn to read?

---



---

12. How do you help in this process?

---



---

How much do you read to your child?

- A great deal
- Quite a bit
- Some
- Just a little
- Not at all

13. Do you feel you need additional skills in helping your child learn to read or understand the meaning of words?  
Explain \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

14. Does your child watch TV regularly? Which programs?  
\_\_\_\_\_  
\_\_\_\_\_

15. Do you regulate which shows your child watches? How much he watches?  
\_\_\_\_\_  
\_\_\_\_\_

16. Do you feel you could benefit from knowing more about selection of TV programs for children?  
\_\_\_\_\_  
\_\_\_\_\_

17. Each child is unique, of course, and each has different skills or some things he does better than other things. What is your child like as far as different skills are concerned?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Language [speech] development. Does he/she talk a great deal to you or other adults?  yes  no  
With other children?  yes  no

Does he reason things out?  
\_\_\_\_\_  
\_\_\_\_\_

Is he/she good with his hands (building or making things)?

Yes  no

Did you or some member of the family spend time with him/her teaching him/her these things?

yes  no

Drawing expressive play. Does he/she draw a lot or does he/she mostly color in coloring books?

Draws pictures  
 Colors in coloring books

Social skills: Does he get along with adults?

yes  no

With other children?  yes  no

18 Are you trying to develop certain skills in your child?

---

How are you trying to do this?

---

19. To what extent do you think his first five years are important to developing certain skills?

Explain

---

20 What's important for a parent to do for a child in this respect?

---

21. In general, what qualities are you trying to develop/encourage in your child?

---

How are you trying to do this?

---

What about qualities you are not too pleased with? Does your child have any? What?

---

How do you deal with these?

---

---



22. To what extent do you feel that what parents do in a child's first five years of life is important to a child's personality?

---



---

What are the most important things a parent should do for a child in this respect?

---



---

23. If your child graduates from High School, what do you expect are his or her chances of getting a good job?

Excellent

Good

Fair

Poor

Very poor

24. In general, what kinds of grades do you expect your child to get from school as he/she continues on?

Excellent

Above average

Average

Below average

Failing

25. How often does your child see you reading books, papers or magazines?

Daily

Weekly

Monthly

More than one daily and weekly

None

26. Can you think of any specific events or circumstances that have had an effect on your child's personality?
- 
- 
-



27. How often do you visit with friends who live in a different part of the city than you?

Daily

Weekly

Monthly

Less than once a month

Never

28. How often does your child help his/her father when he is working on a project?

Very often

Quite often

Sometimes

Not often

Never

SELF-EVALUATION

How would you rate your skills in working with children?  
Rate yourself from 1 - 5, (1) being the lowest and (5) being the highest.

1. My knowledge about the way children grow and develop, physically, socially, and emotionally.
2. Do I use a positive approach in handling my child?
3. Ability to remain controlled in difficult situations.
4. Ability to use good judgement in emergencies.
5. Creative use of materials in the home to use with your child.

Check any of the following that you would be interested in.

I would like to learn more about a child's.....

- physical growth
- social development
- intellectual development
- all areas

WHAT WOULD YOU DO?1. Activity

Cut out shapes that could make the different alphabet letters; i.e., straight lines, long and short, and half circles, big and little.

Materials

Cardboard or heavy paper

What would you do?

1. Take the shapes, e.g., 2 straight lines, one long one short and a small half circle and make the letter "R", then ask the child to repeat the name of the letter.
2. Use the shape on a piece of paper and make a picture, then ask the child what you made.
3. Give your child a few strips and circles and then ask, "What letters can you make with these pieces?"

Answer \_\_\_\_\_

2. ActivityMaterials

A clothesline at child's height and 26 clothespins.

What would you do?

1. Print a letter of the alphabet on each clothespin. Ask the child to look for real things to hang from each clothespin and ask how he/she will know which clothespin to use for hanging the items on the line.
2. Print a letter of the alphabet on each clothespin; write each letter of the alphabet on a separate piece of paper; hang the pieces of paper on the line, matching the letters with the pieces of paper; ask the child the name of each letter.
3. Print a letter of the alphabet on each clothespin; write each letter of the alphabet on a separate piece of paper; lay the pieces of paper with the letters written on them on the floor, out of order; put the clothespins on the line in order [from A to Z] and then ask, "Can you hang up the letters? How will you know where to hang the different letters?"

Answer \_\_\_\_\_

3. ActivityMaterials

Old comic books, coloring books, or ready-to-be discarded picture books, scissors, paste or glue, heavy paper, or cardboard.

What would you do?

1. Place a sequence of pictures on the table that tell a story and ask your child to tell the story using the pictures that are laid out.
2. Ask the child to tell a story using the pictures on the table.
3. Place the pictures on a table or on the floor, out of order and ask, "Can you use these pictures to tell a story? Put them in an order so that they tell your story."

Answer \_\_\_\_\_

4. ActivityMaterials

Measuring cups in different sizes, blocks of different sizes.

What would you do?

1. Place the measuring cups in order from biggest to smallest and explain to your child that the cups are in order since they go from smallest to biggest or biggest to smallest.
2. Make a staircase from the blocks and ask, "How would we know where to put the cups on the stairs, going from small to big?"
3. Ask the child, "How do the blocks and cups go together?"

Answer \_\_\_\_\_

5. ActivityMaterials

Unsorted clean clothes

What would you do?

1. Show your child the separate piles you make when you sort laundry: Mom's pile, Cynthia's pile, the towel pile, etc.

2. Place the clothes in a large pile and begin sorting; Ask your child, "Will you help me sort the clothes into different piles?" [If the child sorts different than you, ask why he/she placed the items together in that way.]
3. As you sort the clothes, hold up each item and say: "Here is Andy's sock, it goes in this pile."

Answer \_\_\_\_\_

## 6. Activity

Put a piece of carbon paper between 2 sheets of white paper.

### Materials

White paper, carbon paper, ballpoint pen

What would you do?

1. Draw a picture of anything on top sheet; remove the carbon and show the child that you have two identical pictures.
2. You and your child both draw pictures on the top sheets of two sets. After removing the carbon say, "Look, I have two pictures that are the same? How did that happen?" [After child answers ask, "Are your pictures the same?"]
3. Ask the child to draw a picture of some object on the top sheet. After she/he is finished, ask him/her to remove the carbon to find out what happened.

Answer \_\_\_\_\_

## 7. Activity

### Materials

A large jar with a wide opening, an egg carton, and an assortment of the following: Bobby pins, toothpicks, paper clips, buttons, coins, safety pins, cut up plastic straw, beads, and dried beans.

What would you do?

1. Fill the jar with all the objects and ask, "Can you sort all these things into different compartments of the egg carton?" [After the child has sorted a few, ask "Why do these things go together?"]
2. Sort out a few of the items into the different compartments, place all the bobby pins together, all the paper clips and buttons, and then ask, "Will you finish sorting out the different objects that are in the glass jar."



8. Activity

Cut out and save a variety of unusual pictures of different kinds of photographs, drawings, cartoons, silhouettes, black and white and color (some of same object or objects).

Materials

Picture magazines, old cards and coloring books, scissors

What would you do?

1. Sort the pictures into piles of different animals and explain to your child why the animals are the same, although some are photographs, some are drawings, and some are cartoons, etc.
2. Sort the pictures out into different piles of animals that fly, those that can't fly, animals that have 4 legs, and those that don't. Ask your child, "Why did I sort the piles into these different piles?"
3. Place the pictures into one pile and ask, "Can you think of ways to sort these pictures?" After sorting a few, ask why do these things go together.

Answer \_\_\_\_\_

9. Activity

Fill a washbasin halfway to the top; place it on a table or on a floor covered with newspaper; an old raincoat cut off and turned backwards can be used as a waterproof smock. Or during bath time for child-----

Materials

Washbasin or bathtub, pitcher, plastic cups, balls, sponges, medicine dropper, empty detergent bottles, newspaper, squeeze bottles, funnel, egg beater, blocks, screws, plastic tubing.

What would you do?

1. Fill the bathtub with some of the above objects, then say to your child, "You can play with these and be careful not to spill any water on the floor".
2. When child is taking a bath, place some of the above objects in the tub, and join with the child in playing with them in the water; during your play, ask some of the following questions: "Which of these floats?" (Try paper, plastic, sponge, soap, metal, a bottle - opened and closed). "Why does this one float?" or "Why does this one sink?"

3. Fill the bathtub with some of the above objects, using some that will float and some that will sink. With your child next to you, say, "I am going to show you which objects sink and which float." [Proceed to select all those that sink and then all those that float, demonstrating to your child the concepts of sinking and floating]. Try the following: Say to your child, "I am going to put this paper in the water and you can watch see that it immediately soaks up water and then becomes too heavy and sinks." "Now I will put in the aluminum to show you that it does not absorb water; it stays light and will float."

Answer \_\_\_\_\_

## 10. Activity

Cover the numbers on the yardstick with adhesive tape.

### Materials

Yardstick, adhesive tape

What would you do?

1. With the yardstick, say to your child, "I will show you how long and how short some things are." Proceed to line the stick up with various objects such as a table leg, a scatter rug, a window sill, a table knife, coffee can, etc., saying "I have put a mark where the window sill came, and you can see that this table leg is longer. I will mark the length of the table leg right here." Measure several selected items, demonstrating to your child that some are shorter than others, and some are longer than others.
2. Tell the child to measure some things in the household; after he has measured several, remove the adhesive tape, and ask the child to measure these things again, marked on paper the length of each item.
3. Ask your child, "Can you find out if some things in our kitchen are shorter than the yardstick? Longer?" If your child does not line the yardstick up with what he is measuring, say, "Is the table leg longer or shorter when you hold it there?" What happens when you put the yardstick right on the floor, even with the bottom of the leg?" [Ask the child to do this with other objects so that he can discover that yardstick should begin with then end with the object in order to know accurately if the object is longer or shorter than the yardstick.]

Answer \_\_\_\_\_

11. Activity

When you open a can of juice, punch just one hole.

Materials

Juice can

What would you do?

1. Say, "Will you pour your juice?" [After child observes that it doesn't pour, say] "What's happening?" [After discussing reason, let child punch a second hole] "Were you right?" "What's happening now?"
2. Say, "I would like to show you something about the can of juice. When I try to pour the juice with just one hole in the can, the juice won't pour because the air is holding the juice in. Now after I punch a second hole in the can, the juice will easily pour out."
3. Leave the can on the table; when the child discovers that the juice does not pour out as it usually does, say, "What do you need to do with the can so that you can pour your juice?"

Answer \_\_\_\_\_

12. ActivityMaterials

Paper, paste, scissors, old scraps such as: String, yarn, cut up pieces of plastic, aluminum foil, old gum wrappers, cloth, ribbon, rickrack, paper clips, bobby pins, pictures, photos, green stamps, feathers, bark, leaves, sticks, seeds, macaroni, dried beans.

What would you do?

1. Arrange the materials on the table, keeping paper materials grouped together and separate from other materials. Say, "Will you make a collage pasting the paper things on top of the paper and other things that are not paper on the bottom."
2. Say to your child, "Here is a pile of things that you can stick on the paper. Make anything you want, but be sure to use just the right amount of glue."
3. With your child begin sticking the objects and scraps on the paper anyway you want. If some of the materials won't stick say, "I wonder what I can use to make this stay on?"

Answer \_\_\_\_\_



Materials

A large piece of paper [several brown paper bags opened and taped together will do], scissors, crayons

What would you do?

1. Place a large piece of paper on the floor and say, "Will you lie down on the paper and I will trace the outline of your body." When finished say, "Now, you can color yourself; try to use the same colors as the clothes you are wearing. When you are finished we will hang it on the door."
2. Place a large piece of paper on the floor and lie down and say, "Can you trace the outline of my body?" When your child is finished say, "Am I that big? How can we be sure that I'm that tall? [After discussing and trying out solutions, say] "Will you help me color my portrait? Where do my eyes go? [Suggest to the child to observe you, noting the placement of facial characteristics relative to each other before tracing them in on the portrait,] or you color in one part and ask child to color in some other parts, referring back to you for making sure of the placement of characteristics.]
3. Place a large piece of paper on the floor and say, "Can you draw yourself on this paper? Here I can help you." [Start your child off by drawing the outline of the body and then ask your child to fill in the portrait with facial features and clothes.]

Answer \_\_\_\_\_

14. ActivityMaterials

A large piece of paper, crayons or felt-tip markers

What would you do?

1. Say to your child, "Can you make a picture map of our neighborhood. First, put our apartment here, and then next to it is Ms. Halverson's and then next to her is the Jones family. You finish the map by putting all the apartment houses on it that are on our street."
2. Spread the paper on the floor, mark out the various houses, stores, playgrounds, vacant lots on your street. Then say, "Can you identify these areas. They are all located on this street we live on. I have given you a clue by putting the initials of some of the names of people who live in some of the houses on our street."

3. First take a walk to look for things that you and your child will want to put on your map: a playground, the vacant lot, a telephone pole, an empty garage, Tyron's house, your house, and so on. When you get home, spread the paper on the floor and help your child mark out where each thing will go. "Where should we begin?" If Tyron's house is here, what will go between his house and our house? How can we help others to know that these are our houses and other things on the street? Is the store bigger than our house? Which way does the school bus come? How can we show where the school bus goes after it leaves the front of our house?"

Answer \_\_\_\_\_

## 15. Activity

### Materials

A large piece of paper

Clothesline or string, clothespins, index cards, or pieces of paper, crayons or felt-tip markers.

What would you do?

1. Ask your child, "What are some of the important events of your life?" "How can we represent these special times so that we can show them on your time line?" (Along with child's ideas, suggest some events such as the day he was born, when you moved to where you live now, the day his baby brother was born.) After you and your child have discussed a way to represent these special times which could be by an old photograph, drawing pictures, putting a date on a piece of paper, or the name of the event, then say, "Can you stick these special events in order on your time line?" (Have your clothesline where he can reach it; if along a wall, it won't be in the way.)
2. Say to your child, "I think it would be fun if we made a time line for you. First we will start with the day you were born. Here, you make a picture of a baby and then hang it at the beginning of the clothesline. When you are finished, we will do the next important thing in your life which was the day you went to the day care center." Continue to suggest 5 or 6 events, having child draw them on cards, and then hang them in order on the line.



3. With the index cards or pieces of paper and crayons or markers, draw pictures to represent several important events in your child's life. Put these pictures on the clothesline with the clothespins, arranging them in an unordered way and then say, "I have some pictures of special events in your life. See if you recognize them and then put them in the right order."

Answer \_\_\_\_\_

A P P E N D I X C  
First Training Session

Welcome parents and explain the purpose of the Parent's Education Program.

Explain general objective - To teach parents to initiate activities that present Problem Solving situations to children, so that they can develop Problem Solving Abilities which are defined as Observational, Listening and Questioning Abilities.

Problem Solving - is a science and science involves aware focus observation. Being able to zero in is a powerful investigative skill. It means concentrating (for children for a short period of time), ignoring what is irrelevant. Parents, to help a child begin the process of keen observation, you will have to help keep the rest of the world at bay (quiet for a few moments) and let observation happen. Children should be encouraged to observe with several senses -- Seeing, Feeling, Tasting, Hearing. Remember! To your child, your attention and approval encourages him/her to continue the activity. A smile, nod and comment will assure that an activity will continue.

For you and your child to Solve a Problem, you must first be able to relate things that are in the Problem Situation to what you already know! How do you do this? You must be aware of how they are similar and different to each other and to what you know. You must be aware how things can be changed or not changed.

Examples of common Problem Solving Situations. (Show how they are solved by relating).

Ask parents, "When you are lost in a strange city or town, what would you do?"

To understand a Problem Solving Situation for a child, ask, "How do your children find something that is lost?" I will give an example first.

"

Child, one morning calls: Mommie, where is my shoe I can't find it?"

Mother should respond this way if she wants to assist in developing Problem Solving Skills: "Where do you think your shoe can be? Could it be where you found it before?"

Ask questions which help a child to think. Increase their motivation by showing your interest, "Let's stop a minute and think of the places it could be," Or, "Let's sit down and make a list."

Problem Solving underlies school performance. Your youngster will be going, in a few more weeks to Public School. He/she will be receiving much less personal attention. He/she will be doing more things in a group setting. There will be a greater demand on their own problem solving skills. There will be more paper and pencil tasks which they will be expected to work on alone.

It is important that during the next few weeks before Public School that they augment skills learned in Kindergarten. Research shows that children's success in Grades 1,2 and 3 is related to later achievement in school. This is the crucial time that they acquire the concept toward school.

#### BEHAVIORS.

READ FROM CHART 8/- On this chart are listed the specific behavior or objectives of the Parent Education Course:

#### 1. PARENTS AND CHILDREN WILL LEARN TO INCREASE THEIR OBSERVATIONAL SKILLS.

SAY: "I would like you to go out into the classroom in the role of an Observer. To be an objective Observer, one must record only what is actually happening. If when you go into the room, your child wants to interact with you simply say, 'Not Now!'

FIVE MINUTES--Send all parents into the classroom (three teams of two) to observe any child. They must write a description of just what they see.

COME BACK IN ROOM -- Discuss what each had recorded. Ask:

1. Did each observer see different things?
2. How did they feel?
3. Did you notice behavior you don't often see?

FIVE MINUTES -- Read from Chart #2 Behavior:

#### 2. PARENTS AND CHILDREN WILL LEARN TO INCREASE THEIR ABILITY TO ASK QUESTIONS.

A simple question of "why" shows a child is trying to establish a relationship. Why do babies cry and sleep all the time? Why is the sun hot? Why can't I stay up late like Johnnie can?"

LISTEN FOR QUESTIONS OF HOW, WHEN OR WHY.

Almost any kind of questions may come from children. But what kinds come from adults? What questions do you usually ask children? Using questions to stimulate discussion and thinking is a common teaching technique. Questions are best and most successfully used if the parent/teacher does not already know the answer, if there is generally no correct answer, or if the questions ask for opinions and experiences of your child. Ask:

- " How do you feel about it?"
- "What do you think?"
- "How would you describe it?"
- "What do you think is important about it?"
- "What does it feel/look/taste/smell/sound like to you?"
- "What do you think is the best way to find out?"

These questions stimulate lively discussion. You and your children can come to conclusions together. If you want to diagnose, be honest:

"I want to see if you can tell how many clothespins are here. How many are there?"

Parents -- I would like you to increase your questions of Why? When? How? Where? Pose these types of questions during work and play with your child. This helps them to think.

FIVE MINUTES'-- NOW LET'S GO BACK INTO THE CLASSROOM. I would like you to focus on your child. Write the questions your child asks and the activity he/she is engaged in.

Come back into classroom. Ask each parent to read at least one question they heard the child ask. Write on Board.

Ask Parents: "Which of these questions do you think facilitate problem solving? (Guide discussion to show when these questions are using similarities, differences and establishing relationships).

Role Play--Set on table interesting and unusual objects. Ask parents to pretend they are children. The task is to create something or do something with these objects --an activity. Ask other parents to observe how they approach the problem. (Let them know they can ask me questions).

FIVE MINUTE DISCUSSION --Ask other parents their reactions. Ask role players how they felt when they role-played. Ask if it would have helped while role playing they had asked more questions of each other or me.



Role Play again-- Eight or ten size units or rods. "Now I'm going to put some different objects on the table. (Using two different parents, set up items on the table). Ask third parent to be the teacher this time. Parents' role playing children ask questions that guide the use of materials of the teacher.

Main Goal--for the teacher to ask questions, encourage role-playing parents to look at similarities, differences of materials, to use what they already know, and think about alternative uses of materials.

For example. Have you considered this for being aware of the relationships and to help you to discover a way to use these materials? Also, by being aware of how things are similar or different, you become aware of how things can be changed, or how they can not be changed.

Summarize Session. Go to the Board. Point out questions which helped parents in their role. Look at objects, noting similarities and differences, how they could be changed and how they remained the same in some ways. Also did they become aware of what the other person was thinking?

GO BACK TO CHART. LOOK AT THIRD OBJECTIVE:

3. PARENTS AND CHILDREN WILL LEARN TO USE LANGUAGE AROUND THEIR SKILLS OF RELATING, COMPARING AND ORGANIZING ACTIVITIES.

POINT OUT - Through the use of questions, we have been using, this is the type of language we want to encourage. "When interacting with children, use words which relate to events, activities and objects that are present or going on at the moment so that the child can understand the meaning of words.

AS YOU SAY THE WORD, DO THE ACTION ASSOCIATED WITH IT. (SHOW EXAMPLE,--RUN, HIT, PLACE. USE THE MOST CORRECT WORD DESCRIBING THAT BEHAVIOR. DON'T USE "BOO\_BOO" FOR BURN, SCRAPE.

One of the major characteristics of five or six year olds is that they constantly talk and



TEN MINUTES -- Send parents into the Classroom. Go to their child. After this activity has been completed, ask:

1. How often did they use questions parents and children?
2. How and under what circumstances did the child use language?
3. How did you feel working this way with your child.

END SESSION-- With Home work Assignment. Homework to be done during the week with your child, and sent back to Mrs. G. Remember, do the evaluation sheet. Classes will be held:

---

TUESDAY NIGHT

6:30 - 8:00 PM

THURSDAY NIGHT

6:30 - 8:00 PM

FRIDAY NIGHT

6:30 - 8:00 PM

1

1

1

2

2

2

3

3

3

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6

7

Discuss-- Every child thinks different thoughts. Uses objects in different ways. Some will not do as well as they should. Your job as a parent is to find out how your child is thinking or solving problems.

HOW CAN YOU DO THIS IN THE HOME? Parents can come up with suggestions, observing, asking questions like "What are you thinking?" "How did you get that answer?" "How is this a better way?"

One way is to set up situations that require children to think, then observe them in the activity that they are engaged in.

Let's look at this situation and what is concrete. (Clothes Line, pins, pictures and real objects). Concrete things had to relate. What is concrete is real.

DEFINITION OF CONCRETE: That which is observable. Ask to observe concrete things. "Some of you will use concrete evidence as a way of finding out what children think".

NUMBER 8 --Observable answer to problems. Go back to "What does this mean to you now? Let's go back to the novel activities. Remember, how to role-play. Basically, this is choosing alternative answers and solutions. Basically, they are trying to think of what I'm thinking. Choosing alternatives. How is it similar? How is it different? Pick a logically correct answer, arriving at the best solution is picking the best relationships in order to be aware of similarities and differences.

HOME WORK ASSIGNMENT for next class. Have three different situations. Write up for purpose of discovering how child thinks. Help child to understand the thinking process. Parent could role play where you describe what you are thinking. Do this often. This will help their child understand their point of view.

TRAINING SESSION  
HOMEWORK ASSIGNMENT

- A) Make a clothes line the child's height. (26 clothespins are needed. With a magic marker, put all the letters of the alphabet on the clothespins or place letters on a sheet of paper and pin to clothes line. You and your child should cut out pictures of objects. Parents should encourage their child to select the pictures. Ask your child, "Can you match the picture with a letter? "Will you clip the picture with a letter, on the clothes line?" For many pictures there are several letters that can be used. This is good for a child to become aware of alternative ways of describing or naming a picture. When the child makes a choice you should ask: "Why did you choose that letter"?

If a child does not know how to match a picture with a letter the parent should not tell the answer through questions; i.e., "Did you notice there were many doors on the building?" "Do apartment houses have doors like that on the first floor?" (Here is a case where the child may name a building an apartment house rather than a medical center where doctor's work)

B) The Evaluation

Write down an evaluation of this activity.

1. Did it go well?
2. What were the problems?
3. Did the child enjoy it?
4. What questions did you ask that seemed to help your child?
5. What did the child learn?
6. Did you enjoy doing this activity with your child?





SECOND TRAINING SESSION  
May 10, 12, 13

Review definition of Problem Solving.

Review 7 behaviors from large chart—Give a brief resume of last training session.

Evaluation of homework activity—ask one parent to present this. Ask other parents what they thought of activities.

Write on blackboard particularly good comments—collect evaluation. Being covering new work—now focus on remaining 5 behaviors for this training session.

4th Behavior

Parents and children will learn to increase their skills to relate things and events in their daily environment.

5th Behavior

Parents and children will learn to increase their skills to compare objects and events in the natural environment.

Ask parents to see if there is any differences between no. 4 & 5 behaviors—wording is somewhat different but the meaning is similar. Discuss with parents the fact that there is really no difference for when we compare objects and events that is a way of relating them—WHEN I SHOW YOU THIS PIECE OF STRING AND THIS ELASTIC BAND—How are they related?

Let's write on the board what you think as you try to relate these two objects.

As you can see, some of you thought how the two are similar. Point to these comments, i.e., some may have said: "How they are alike—They are both used to hold things together."

"We use them both at home."

"They are both thin."

Some thought how they are different, e.g.,

"They are made of different material."

"One stretches and one doesn't."

"One is a line," and "One is a shape."

With these examples we can see that to relate things and events in our daily lives, we think how they are similar or the same as other things we see at the moment and to what we already know.

Write on board—Ask how they are similar and how they are different.

SIMILAR

String -- Elastic band

DIFFERENT

String -- Elastic band

4 characteristics

Now ask! "Can we change a string into an elastic band?"  
"No, it is not possible!"

So we know that the elastic band and the string are not related by being physically the same object, but we do know that they are similar in terms of the functions they serve, i.e., TO HOLD THINGS TOGETHER.

And we know that they are different, they are made of different material.

Process of Problem Solving

When you have to solve a problem at home, it is important to think about it in terms of how similar it is to other things and what we already know. How is it similar, how is it different, and what could be changed. Try to think about other problems which were similar.

Can anyone here give me an example of a recent problem you had in your home. We will try to analyze it by relating.

Write on board — similarities — differences that parents will suggest and also how or if anything can be changed. THIS IS VERY CRITICAL IN PROBLEM SOVLING.

Activity

Classification/grouping items which have something in common. Let parents classify then bring in 2 child.

Use the egg carton container. Use 10 items (5 from egg carton activity in 1st training session, 5 new ones). We call this process, classification. We do this all the time, that is we need to classify or put object into groups where they all share things in common, i.e.

If someone says to us,

"I brought a new car!" We immediately know what he/she brought. We know what all cars share in common. We know how they can differ from one another. We have a visual image of them. Knowing this helps us to communicate to solve problems. For our children, they don't know as much as we do, but are learning

how things are similar and different, how they can be changed, and how they can be grouped. They learn this mostly by using objects. If we look at these 10 objects again, children will be using these in a variety of situations as you have done, or will do and through their activity will classify them.

### 6th Behavior

Parents and children will learn to understand each others perspective and ways of viewing a problem situation.

### DISCUSSION

Every child thinks different thoughts and uses objects in different ways. Some children will not be able to do as well as they should. Your job as a parent is to find out how your child is thinking or solving problems and assist, support, and enhance that process.

How can you do this in the home?

Ask parents to think of ways this can be accomplished. Perhaps they will say by:

1. Observing
2. Questioning — like, what are you thinking? How did you get that answer? How is this a better way?

Another way is to set up a situation that requires the child to think.

Here, set up a problem situation for two parents to role play. The problem could be: How to raise some money for a classroom weekend camping trip. The parents are to try to know what the other is thinking.

After this role play, discuss. Ask these questions to the group:

1. "What did each parent try to do to find out what the other was thinking?"
2. Ask the two role players: "What was most effective in finding out how the other person was thinking?"
3. "Did this awareness help to solve the problem?"

Then say:

"If you are to help your child improve his/her problem-solving abilities, it is important to know how he/she thinks—at what



level can they relate things, think of alternatives and know what can and cannot be changed. With this information, you then know what situations to develop that will interest your child—and very important, you will know that many of his responses are not wrong—but are based on how he/she perceives and understands—which is very different from how we perceive and understand many situations."

"Let us find out some of the ways our children think. I want you to go into the classroom for 10 minutes and start playing with your child. Try to find out what your child is thinking—i.e., what does the activity mean to him/her, what is their understanding of what he/she is playing or how to play?"

After they return to the classroom, discuss their activity with the children ask:

1. What did you discover about your child's thinking?
2. How did you do this?
3. Was it new information for you?
4. Did this awareness help you to interact with your child—and did it help you to understand what kinds of questions you might ask your child?
5. If you feel you didn't get any awareness of how your child was thinking—what could you do to solve this problem?  
(Encourage other parents to make suggestions.) A part of our assignment this week will be to explore ways of understanding your child's thinking.

Help your child to understand your way of thinking. Remember role plan—thinking out loud. Do this often.

Now we should move on and look at our last two objectives.

### Objectives 7 & 8

- #7 Parents and children will learn to make choices on the basis of concrete evidence and give a logical rational (reason) for their choice.
- #8 Parents and children will learn to consider alternative answers and solutions to problems.

"Let's take the #7 first and, to understand this, we will review the activity we did a few minutes ago—when the 10 objects had to be sorted and classified. In this activity, you were dealing with concrete materials (Lift up some of the items). They are real and your choices were based on looking at the feeling these real objects and relating these perceptions to what you knew. For our purposes, we will consider anything that is real in our environment as concrete and to be real, it has to be actual—not artificial, illusory, or apparent—but occurring in fact, fundamental, essential. Therefore, when you make a choice on concrete or real evidence, you are more likely to make the best choice. Let us use an example. When you go shopping at the supermarket, why do you choose one head of lettuce over another? (Have several parents respond).

"Here is a good example where our choice is guided by what is real and concrete and generally we choose the best head of lettuce we can find. Now, when you buy a new dress or pair of slacks, what do you consider? Is it real? Are your choices guided by what is essential and not what is just apparent or illusory?"

I know that we don't always make choices, on this basis, especially in regard to clothes, but perhaps if we did more often, we would save money and not find ourselves wearing something only once or twice.

#### CHILD SHOULD MAKE CHOICES ON CONCRETE EVIDENCE.

"For children it is very important that they learn to make choices on the basis of concrete real evidence. For example, when your child selects a certain TV show, what do you think guides his/her selection?" (Put some of the parents' suggestions on the board.) Then ask: How many of these reasons are essential ones? That's right—not many—for we can see that most of them are only apparent since they are readily changed from moment to moment and may in fact not be related at all to what your children want to see.

How do children make choices?

"Let us take another example. How does your child choose a snack food? (List some reasons on board and include the particular snack, e.g., cereal).

Again, we can see that some of these reasons are not really related to the particular snack. That is, the child isn't choosing because he/she knows the cereal has vitamins or is good for him/her, or is easy to eat, but makes his/her choice on the basis of how the box looks, if he/she saw it on TV, the prize inside, etc.

Parents should explain reasons to child. Then act as role models.

Now what if you had a problem at home—you wanted your child to choose fruits more often for a snack food; what could you do to help your child make this choice? (After parents give some reasons summarize these by saying: "One way to help your child is to tell him/her why you think it is good to eat fruit—to supply the essential reasons to your child and then to help your child know that other foods such as cookies, potato chips, etc., do not meet these reasons but they are eaten for other reasons—and to let your child name these. Often if your child knows why he/she should eat certain foods he/she will choose them—for it makes sense and is not just an adult rule that for them can seem very unrelated and only followed since you have the power. This last statement moves us into the last objective.



#8. Parents will consider alternative solutions to problems.

It is important that children become aware of alternative solutions to problems; and they can with your help by allowing your child to have more than one choice and to help him/her think about each choice. Since our young children cannot know about all the alternatives and relationships as we can, they will need assistance in sometimes describing and/or demonstrating these alternatives. Your child will often act out the consequences in order to find out which is the best. For example, when you say to your child:

"You can watch TV for 15 more minutes before bedtime; or if you go to bed now, I will read you a story."

How will your child make a choice in this situation? Most likely he/she will make it on the basis of their past experiences of watching TV and listening to a story and how much enjoyment each offered; but they may not think, at the same time, about such reasons as (1) listening to a story would be a time with Mom or Dad, and I don't get to spend much time with her/him or (2) watching 15 minutes more of TV means only a part of a show, or (3) the show on TV is one I don't really like, or (4) if we read, I can choose the story.

For your child to be aware of all these reasons, they need to be described to your child to help him know what is similar about the two choices and what is different; then your child can make a choice or solve the problem on the basis of what is essential.

And, very important is when they have a choice, they begin to think about the reasons for each; and they begin to realize that there are good logical reasons for why they are asked to do something.

#### ALLOW CHILD CHANCES TO MAKE CHOICES.

I know there are many times during the day when you cannot give your child opportunities to choose among several alternatives but I also know that there are many times that we can; and that with explaining the reasons for each alternative and letting the children test out each different alternative to find out which is best, they will begin to act more independently and become better problem solvers.

On the board, let us list 5 or 6 times or activities that occur in our homes, where we could have several alternatives for the child to choose; e.g., No. 1 could be choosing the cereal for breakfast (child has a selection of 3 or 4 different kinds.)

#### T.V. SHOWS.

List 5 more, then say:

How would you help your child become aware of the similarities and differences across each choice?

Choose one of the parent's suggestions for the above. List some of the parent's suggestions.

If parents don't suggest these ideas, include them:

1. Asking the child what is the same among the choices.
2. Asking the child what is different about each choice.
3. Asking the child how are the differences related to other things that have to be considered.
4. Asking the child what they know about each choice from what they have done before.
5. Letting the child select one choice and test it out and then another choice and testing it out until all choices have been acted upon in order to find out which is the best choice for the problem. Remember their capacity to think about all the consequences of one choice has not developed and will not until 11 or 12 years of age. Therefore, they will not think the same as you and in this case will not think about the several possibilities.

#### OFTEN SEVERAL SOLUTIONS TO PROBLEMS.

Parents and children will learn to consider alternatives answers and solutions to problems.

Ask:

"What does this mean to you?" (Have several parents respond.)  
 Yes, that's right, there is usually more than one answer to a problem; more than one way of doing something and the way to find out which is the best, is a process of relating each solution to the problem and thinking about or acting out the consequences of using that solution, e.g., (you need to go shopping—there are three times in which you could go. How do you choose the best alternative? (Have parents suggest how they would decide.)  
 You can see by your suggestion that you thought about some of the consequences of each time and then were able to choose the best time. And notice that in this process you made judgments on the basis of what was concrete or real—the actual events. Also, this process was a comparison, for you had to decide what was different by going at one time then another and what remained the same for all the times.

Let us take another example. How do you decide to buy a new car? You have several alternatives, of course, for there are several models; how do you choose which is the best for you? (List their reasons on the board.)

Again, we can observe that for many of us, our choices are guided by knowing what is different about each model. What is the same and therefore, not a factor in our final choice. And knowing these differences and similarities is a matter of knowing what is real; also we have to consider our finances and the expense of maintaining the car in relation to other expenses; and if it is to be shared, the preferences of others. All of the things one may consider before making a choice or choosing among alternatives.

Let us try another exercise so we can see how important this process of considering all alternatives is.

We will imagine that we have moved the kindergarten program and the Infant-Toddler Center to another location, since this building's new owners do not want outside educational functions in their building. Three locations have been cited:

1. A different church building on State Street about two miles from here; the rooms are in a wing of the church and the kindergarten classroom and Infant-Toddler program would share the same physical space.
2. A closed clothing store on State Street that has a large open area that could be divided into classroom and office space for both programs.
3. Empty classrooms in elementary school on                      Avenue. The school has been bought by the city government and leased out to different community groups. We would have the first floor of the three story structure.

In making our choice, we have to look at several things.

What is real or concrete.

What is different, what remained the same?

What is similar?

Consider cost.

Give assignment for next week.



THIRD TRAINING SESSION  
May 25 & June 1, 1977

Begin with the question, "Have any of you changed some of the ways you respond to your children since the training sessions started?"

Discuss the responses. Write on board those responses that go with one of the eight objects. Example: If they are asking more questions, put a star or check by the response, or if they are trying to find out how their child thinks, put a check by the response.

Then ask, "How did your child react to your new behaviors? What kind of learning did you observe for your child?"

Discuss their responses. (Hopefully some of these will show that children were more motivated to participate in activities and enjoyed their parents involvement.)

Ask:

"Have you changed in terms of how you solve problems?"

(If possible use an example from a parent who applied some of the eight objectives in solving a problem. Describe the steps the parent went through.)

From the discussion, review the eight objectives. Take each one separately. Start with No. 1 and give several examples of each.  
Examples:

#1 Parents and children will learn to increase their observational skills.

Ask:

"What did we learn about good observing?" After parents give their responses, say: We learned for this objective to only use what we observe for understanding and to be aware of the situation where the behavior is occurring, so we know what the child is responding to. Also, when we have doubts about what the child is feeling, perceiving, or thinking, then we should ask the child, do not read into children's behavior (for it is easy to do, and often we are wrong: For example, if one 4-year-old child was hitting another 4-year-old child, what could be some of the reasons?) (Encourage parents to think of as many reasons as possible; if not, mention, include that children are playing and this is all part of the game.)

With this example, you can be aware of all possible things that affect the child's behavior, and for the parent or teacher to know why the child responds or acts the way he/she does, means you must be a GOOD OBSERVER.



Also, as we have often pointed out, if you are to set up good problem situations for your child to solve, you must observe and find out what your child can do now, how he solves problems, and his/her interest before you can help and encourage your child's growth.

Read the second objective.

- #2 Parents and children will learn to increase their ability to ask questions!

THIS IS VERY IMPORTANT, how to ask good questions. We know that we need to understand our children and the kinds of thinking they are capable of. Also, we know the way certain things, right in the home situation can be used for children's problem-solving. Specifically, we can create good questions and probe child's thinking around things and events in the home. Example:

1. How does it work?
  2. Why?
  3. Are the similarities or how is it the same? or different?
  4. What stays the same, can ew change it?
  5. How can we make something the same as this one? different?
- #3 Our Third Objective (parents and children will learn to use language around their skills or relating, comparing, and organizing activities.)

IT IS IMPORTANT (ESPECIALLY FOR YOUNG CHILDREN WHOSE WORDS MAY BE LIMITED, NOT FULLY UNDERSTOOD, AND USED ARBITRARILY.) To remember to use words that refer to what the child is doing and playing, words which describe your actions when doing something. Also, talk about similarities, differences, how things go together, and how they change.

- #4 Parents and child will learn to increase their skills to relate things and events in their daily environment.

For number 4, how do we relate things in our environment? We relate things by understanding what things about them are permanent and what is changeable. Also what can be done to make things the same or different.

For example: How is this evening's training session related to the one week before last?

Put on board -- Similarities — Differences

Ask: What could we do to make this training session the same as last week? What can be changed? Discussion.

When children are young and there is much in their environment that still does not make sense to them. Their efforts to be aware and to understand is a process of relating discovering similarities and differences among objects and events. They learn:

1. How things change when something is added or taken away.
2. How somethings don't change, when other situations or objects do.

This whole effort to understand how their environment works is best accomplished through problem-solving.

#### Object 4 & 5

Objectives 4 & 5 are very similar. No. 4 says "Parents and children will learn to increase their skills to relate things and events in their daily environment."

No. 5 says parents and children will learn to increase their skills to compare objects and events in their natural environment.

Wording is somewhat different. Relate and compare. The meaning is similar for when we compare objects and events that is a way of relating them.

Example:

WHEN I SHOW THIS STRING AND THIS ELASTIC BAND, How are they related?

Let parents respond.

Some of you thought the two are similar. Some may have said they are alike, "They hold things together." They are both thin—we use them both at home—some may have said the way they are different—made of different material. One stretches and one doesn't. One is a line, one is a shape.

With these examples we can see that to relate things and events in our daily lives, we think how they are similar or the same as other things we see at the moment and to what we already know.

#### Behavior 6

Parents and children will learn to understand each other's perspective and way of viewing a problem situation. At this point ask parents who attended first session and did homework if they found out how their child thinks. Remember it takes a long time before you feel comfortable in knowing how a child may view a situation. If you ask enough questions and establish communication with your child you will be more comfortable.

To help your child understand how you solve problems, try thinking out loud—remember, we spoke about looking into the refrigerator. Say, let's see what we can have for supper? To find out what your child is thinking, observe him/her—question him/her. Ask what are your thinking? How did you get that answer? How is this a better way?

Do you remember what we decided the word "concrete" means? We decided that aspects or characteristics that are real and essential and that are factual—that is we can observe them with regularity, are concrete and those characteristics that are only apparent, illusory, and inferred are not concrete.

Our No. 7 Behavior is

(Parents and children will learn to make choices on the basis of concrete evidence and give logical rationale for their choice) We could ask—why is it important for children to make choices on the basis of concrete evidence. It is important so that they understand the consequence of their choice. They will better understand this, if their reasons for choosing are concrete. They can visualize it and repeat the same choice. Also, they gain a sense of control over their environment, as well as the ability to act independently. If evidence and reasons for choice are concrete, children can justify their choice. It will be a rational or logical choice for they are basing their decisions on what is real and essential in a situation.

Now for our last objective -- #8

Parents and children will learn to consider alternative answers and solutions to problems.

This follows number 7 as if you and your child are to know what is concrete evidence and use concrete evidence for choosing, there must be alternative solutions to choose from in order to find out if you are right. For example, in solving a problem a child may not be sure of the best solution. He/She must be given the opportunity to try out more than one, so he knows for sure that a particular choice was best. If, on the other hand, there is only one choice for the child, they will often not be able to think why it is the best choice and if there is no one to give him the solution they will be unable or less able to think of the best solution.

Parents—when you yourself are limited to one choice, there is less reason for you to think why it is the best choice (and in many cases, it will not be) and as important, you will not discover that there may be several good solutions and answers to problem situations.

Place special objects out for child to see and touch. The first person you will buy a present for is an adult man, i.e., father, uncle, grandfather. What would you choose?

As the child makes a selection ask, why did you choose that one? The parent will repeat the same sequence for (1) an adult woman, sister, aunt, and (2) a friend of the child's. Each time ask why that selection was made.



After parents return list on board some of the reasons for selection. In each case have parent identify whether the child was thinking about the other person and kept in mind his interests, needs, or what he/she uses. Some children's choices will be made upon consideration of the other person's perspective, other children may not consider the other's view point at all. Continue this for other persons.

Then, discuss how important this ability is if children are to relate, i.e., to discover similarities and differences, what remains constant, and what changes in their environment. Children need to consider several view points as aspects of a situation simultaneously not just their own, if they can become good problem solvers. In this exercise, the problem was choosing from among alternatives.

How much do you consider your child's view point or way of thinking?

Certainly if this was done more, our behavior toward the child would be more appropriate and also for the child if they consider our view point (how we think) they too would act more appropriately. And for them (children) it is more difficult to understand what and how we are thinking. So remember to describe many times your thoughts to your child.

To help your children become better problem solvers, I am going to give you a curriculum guide to use at home. (Pass out and spend a few minutes going through it.) This guide has several activities with instructions and questions to follow. I would like you to do one each day with your child over the next month. In your guide at the end of each chapter, there are two blank sheets for you to evaluate your involvement with your child and to describe an activity that you developed that promotes problem solving. Every Monday, beginning June 6, you should send one of the sets in with your child to Mrs. Gonsalves and she will forward them to me. It doesn't matter which set from the guide as there are 6. If you want to start in the middle of the guide to do those activities, preceding the set do so. But, I would like you to try to complete the entire guide and use each evaluation paper for the different groups. It is important for me to know how you are doing--what is good about the activities and what you don't like--what your child is gaining and how you can see where these eight problem solving objectives can be used many times and in many ways in your home.

AT this point, go through the guide from the beginning turning the pages until you reach the two parent sheets. Have parents write their names and date on these two sheets before they return them to the school on each Monday. List the dates of Mondays—June 6, 13, 20, 27th. Parents are to return the sets. There will be a home prize for the home. Something for the parent and the child.

Explain about the need for home visits to go over the sessions parents missed. Try to get this, then try to get all sets to be completed in one week.

Schedule home visits.



TRAINING SESSION  
HOMEWORK ASSIGNMENT

- A) Make a clothes line the child's height. (26 clothespins are needed. With a magic marker, put all the letters of the alphabet on the clothespins or place letters on a sheet of paper and pin to clothes line. You and your child should cut out pictures of objects. Parents should encourage their child to select the pictures. Ask your child, "Can you match the picture with a letter? "Will you clip the picture with a letter, on the clothes line?" For many pictures there are several letters that can be used. This is good for a child to become aware of alternative ways of describing or naming a picture. When the child makes a choice you should ask: "Why did you choose that letter"?

If a child does not know how to match a picture with a letter the parent should not tell the answer through questions; i.e., "Did you notice there were many doors on the building?" "Do apartment houses have doors like that on the first floor?" (Here is a case where the child may name a building an apartment house rather than a medical center where doctor's work)

B) The Evaluation

Write down an evaluation of this activity.

1. Did it go well?
2. What were the problems?
3. Did the child enjoy it?
4. What questions did you ask that seemed to help your child?
5. What did the child learn?
6. Did you enjoy doing this activity with your child?



## APPENDIX D

## PARENTS HOME CURRICULUM GUIDE

Dear Parents:

Teaching children how to go about solving problems is considered by many to be the fundamental mission of education. It is argued that since it is impossible to predict what knowledge a child will need in this rapidly changing world we should help him or her to learn to solve problems. An education that will prepare him for a variety of situations and for such matters yet to be discovered.

Closely related to problem solving skills are those of creativity. The child who is limited in the realm of creativity may be unable to solve a problem not because he/she lacks the necessary reasoning skills but because he/she is unable to see and make possible alternatives. It is felt that this Home Curriculum Guide will help you to enhance your child's ability to do:

- a. Detect problems or problem situations,
- b. Define problems,
- c. Use ordering sequence in problem solving,
- d. Find possible solutions
- e. Classification in relating skills in problem solving.

It is my hope that you and your child will enjoy doing these activities and that you can use this guide for years to come.

Sincerely,

*Lucile H. Layton*  
Lucile H. Layton



A Beginning Emphasis on Problem Solving

The senses--sight, hearing, touch, taste and smell--bring you and your child information about the world. The degree to which these senses are developed determines the amount of information you can obtain. In fact, for a child under eight years of age, the use of his/her hands, eyes, ears, nose, and body is more important than the use of words for constructing knowledge. Most of your child's understanding of the environment are gained through action schemas, not verbal schemas, and action implies the use of the senses.

Children under eight years of age want to initiate activities, to explore and to discover the relationships in their environment and to use their knowledge in constructing further knowledge. Support their curiosity-usually with a little prompting, they will try to touch, manipulate, smell, taste, and hear and look at whatever is around them. Within reason, let them. You will remove or restrict harmful objects and actions, but don't discourage your child's need to probe into his/her environment. And just as important is your probing and discovering what is around you and how it works; your interest, activity, and encouragement will increase the number of meaningful experiences for your child.

With the use of the senses, prior knowledge and curiosity, your child learns how things and events are similar and different, what remains the same across change and how things change. These learnings are a process of constructing knowledge or understanding of his/her environment. The activities described in this book are problem-solving situations. There is a problem for there is conflict for your child; not everything in the situation is known. Some is familiar and some is unfamiliar; and for your child, the novelty or newness of a situation will motivate your child to solve the problem(s).





Materials: A large cardboard box  
scissors

tape (the wider, the better)  
assorted small objects of various textures and sizes, some familiar and  
some unfamiliar to your child.

Tape the top of the box closed. Cut a 3-inch hole on two opposite sides of the  
box and let your child decorate the box however he/she would like.

#### How to Play

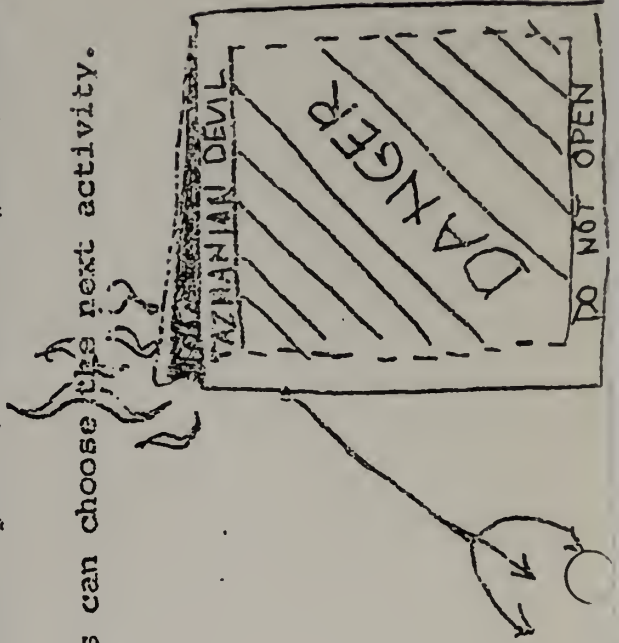
Fill the box with several objects. Place the box in front of your child so  
that he/she can reach--but not see--into it. The object of the game is to  
identify each object by feeling it. Once your child has named the object,  
he/she pulls it out to see if he/she is correct.

If not correct, these go in one group; the correctly named objects go into  
another group.

When child is puzzled, ask, "Can you think of something that the object is  
similar to or reminds you of?" "How is it different from something that you  
may have thought it was?"

Now it is your turn; have your child select several objects to put in the box  
for you to guess. As you try to name objects, describe your process of feeling  
and comparing.

The one with the most named objects can choose the next activity.



### A Time to Listen

Materials: A tape recorder or if you don't have a tape recorder, ask your child to close his/her eyes and guess the sound you make.

#### Activity

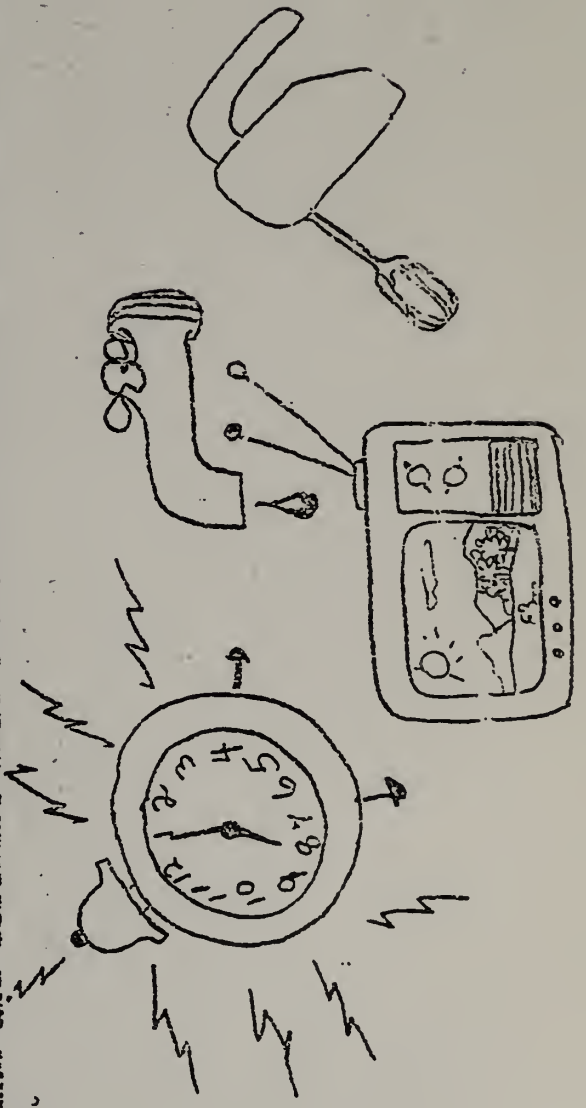
During meal preparation, shopping, watching TV, or in special play time with your child, ask your child to close his eyes (or have ready a tape of sounds) and guess the sounds that are made. Some interesting sounds to try are:

- Familiar voices
- Clocks ticking
- Water running
- Refrigerator door being shut
- Window being opened

- Alarm clock going off
- Bicycle bell
- Mixing with a spoon
- Wrapping with wax paper

- Footsteps
- Egg beater
- Electric shaver

Encourage your child to verbally describe the sound while guessing and to think and describe what the sound is similar to and/or what it is not similar to.



### Another Extension

While in the kitchen, preparing a meal or in the living room watching TV, draw the outline of a shape and ask your child to make the shape into anything he/she wants. If you outline a circle, he/she may decide to make the circle into a clown's face or a sun or whatever. Trade roles. Let your child draw the initial shape and you doodle into something.

Another good activity is to use a peg-board and rubber band and model for your child how you can change a square into a rectangle by simply moving the pegs around on the boards without removing the band.

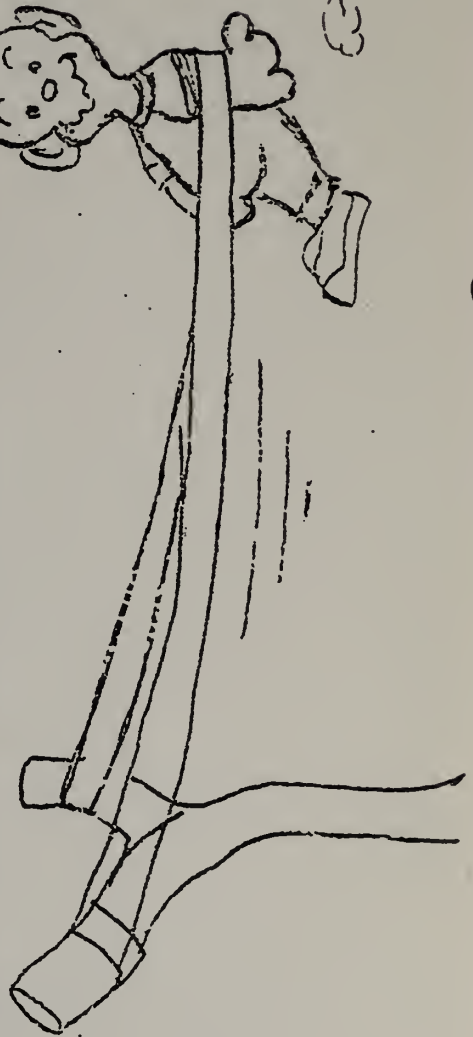
Encourage your child to explore making a variety of shapes with the rubber bands on the peg boards. Ask:

"What happens when you change a square into a rectangle?" (Child should come up with an answer that indicates he/she knows that sides get longer) or a circle into a square (you make four corners.)

Ask:

"Does the area in the middle change?" "How do you know if it changes?" (Encourage child that he/she can estimate this by counting number of peg holes enclosed by the rubber bands?)

Through this activity, child begins to discover that in some cases area stays the same, while the length and width of the sides may change. Also, child begins to discover that that enclosed shapes are all on a continuum of change and that one can make a different shape by changing the outside line.





## Shapes: Paint Everywhere

Shapes are all around you and your child. When you see a shape, ask, "What shape is that?" "Do you see the mailbox over there, what shape is it?"

If your child is puzzled, ask:

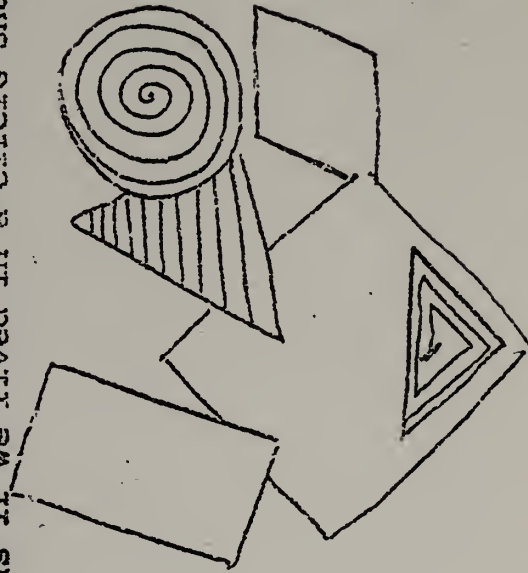
"Can you describe for me the shapes of a rectangle (or whatever shape the object pointed out is)? If correct say, "Look at the mailbox again, can you tell what shape it is?"

If the child cannot describe the shape, you can do this and then ask if they can recognize this shape in the object.

Encourage your child to feel the shape with his/her hands, legs and arms. During this process, they will discover that objects can be composed of many shapes, depending on the side or perspective they are viewing and feeling.

Ask: "Why do you think the house is in a shape like a square and not a circle?"

Your child will think of several good reasons; a good contrast is to ask, "What would be different for us if we lived in a circle shaped house?"





Prepare a lunch or dinner that has several distinct tastes and smells--do this when your child isn't around. When mealtime arrives, ask your child if he/she wants to play a special guessing game. If yes, blindfold him/her with a hankerchief. At the table, he/she tries to guess what food he/she is eating.

Encourage your child to verbally describe his/her process of solving the problem of identifying the food. Ask:

"What does it taste like?"

"What other kinds of food taste like the one you are tasting?"

"How is it different from (either the food tasted before, or you name one that may be similar but yet distinctly different)?"

This is a good activity for you to share with your child. Have your child select some foods that have different tastes (this process of choosing is an excellent problem that your child has to solve) and you wear the blindfold and guess the food; describe your process of guessing, naming foods that taste similar and those that taste different than the one you are testing.

- I. Evaluate one of the preceding activities; answer these questions.
- A. What did your child learn?
  - B. What did you learn?
  - C. What questions did you use and how did they help your child?
  - D. What problems did your child solve?

Describe an activity you created for you and your child during the first week of the use of the Curriculum Guide. Include the problem that was to be solved and the questions you asked.

## Puzzle Construction

Materials: Colored pictures from old calendars, postcards, and magazines; cardboard (shirt cards are good), glue, scissors.

Paste the pictures on the cardboard. Paste thoroughly; the better you paste, the better the puzzle. Cut the puzzle into 10 to 25 pieces (one or two at each 5 intervals - 10,15,20,25).

"Sit down with your child and ask: "Here is a picture that has been cut into several pieces; can you put the pieces together to make the picture whole again?"

Be sure to challenge your child; if the puzzle is too easy, child will not have to use problem-solving skills of discrimination and thinking what is similar about the pieces, how they go together, and relating the picture to a visual image.

Sometimes ask, "What are you thinking about that helps you to put the puzzle together?"

If puzzle is too difficult, describe the picture for the child, place one or two pieces and ask, "Can you keep the picture in mind while you work?"



A Further Note on Relationships

We often use words with our child, such as 'longer', 'on top of', 'around', 'nearer', 'before', 'lighter', and more. These words all imply a relationship of one thing to another; and that these things or objects are understood by comparing them on the basis of the relationships that the word represents. For example, one antenna in comparison with another is longer. "Our house is nearer to the school than Jeremiah's house." Before your child can use a relationship word, he/she has to (1) learn the actual words, and (2) understand the concept behind them. Your child has to keep in mind both the word and the concept behind and the problem of comparing or relating two or more things in a certain way. Here are some of the relationships that your child is often asked to understand:

This antenna is longer than that one. (Your child has to think of the size of the one antenna in relationship to the other one, and know that longer means more of the antenna.)

The antenna should be on top of the TV. Your child has to think of where he stands in relation to the TV and that top means a certain place or direction on the TV.)

Drive your car around the table. (Your child has to think of relating the movement of the car in relationship to the table and that around means going in a certain direction.)

The ball is nearer to the chair than to the door. (Here your child has to think or relate the position of the ball in relationship to the chair and door and know that nearer means closer.)

Make sure you leave before supertime. (Your child has to relate his activity with the activities where he is visiting that suggest supertime is approaching and to know that before means it happens first, a concept of time.)

you carry this box, it is lighter. (Here your child has to think of the relationship between his box and your box and know that lighter means less.)

No, you have more books. (Your child has to think of the relationship of how many books he has with the number some one else has and to know that more means increased amount.)

It is becoming obvious that so much of your child's knowledge is built on an understanding of relationships and that things are understood by comparing them in a certain way to something else. In most of the problems your child is asked to solve, he/she has to think of something in relationship to something else. In order to understand the various ways that things can be related, your child needs many experiences of problem solving that involve use of objects. For example, he will be helped to learn the concept of size by playing with measuring cups and observing and feeling that the biggest measuring cup is the biggest because it holds more; and that another cup is called a  $\frac{1}{2}$  cup (or looks smaller) because it holds less than the big cup; but at the same time by playing with other containers, he discovers that the biggest cup can't be called the biggest when comparing how much it holds in relation to another type of container that holds more. Now it becomes the smallest since it holds less.

Your child needs many and a variety of experiences of playing and experimenting with objects. He/she needs to hear the words that are used to represent the various relationships, such as big, bigger, biggest, little, littler, littlest, long, round, on top of, under, on, in, inside, outside, in between, next to, behind, etc. So be sure to verbally describe the many times that you are comparing things and events so that your child hears these words and what relationship they represent. Encourage your child to explain his activity and when you see him comparing things or putting things or events in some order.

Putting things into relationship is necessary in order to understand the nature of those things, their various attributes. Red is not something inherent in an object, but a color that is only known by comparing it with other colors and thereby understanding how it differs from other colors. The knowledge is an understanding and use of relationships. The activities described in this book are all posed as problems so that your child is asked to put things into relationships in order to reach a solution.



How to Gain - Putting children's Character-orientation - Into a Relationship - The Essence of What Has Come On Before and What is to Follow

An activity that begins to help your child understand the concept of Weight

First, give your child some weight words of light, lighter, lightest, heavy, heavier, heaviest, and have him/her list and compare two or three objects that will show these relationships. While your child is holding different objects, ask:

"Which one is lighter?" "Why is it lighter?"

Now, put the heavier thing in one hand and take this object (one that weighs more than the one your child holds) "Which one is lighter?" "Heavier?" "Weights more?" (Here your child has the experience of feeling and observing that weight is not inherent in the objects but is a relationship only understood by comparing one thing with another.

Later on another variation of this is to introduce the use of the scale and have your child weigh a variety of things on the scale. Here, say:

"On the scale the arrow says you weigh 65 pounds. We will write this on a piece of paper. Now when I stand on the scale, the arrow says I weigh 168 pounds. Who is heavier?" "Who is lighter?"

"Let us weigh some other things so that we can understand how much one pound means." (Find some object and try to include one that weighs a pound so that the child begins to understand pound as a unit of measurement and that he can always recall some particular object and the feel of it when thinking of one pound.)

"Now that we know this box of sugar weighs one pound, and that you weigh 65 pounds, how many boxes of sugar would we need to equal your weight?" (After your child answers, Use your weight and other objects that you have equal that same weight. This experience is good for understanding the concept of equal, or relationships of equal. Also use the words of more and less when you are comparing the differing weights of objects and that in this situation they are synonymous with the words, heavier, lighter (less) same (equal).)



Watch Where I Go - An Activity for Helping Your Child Understand the Relationship of Direction

You select a truck or car and your child selects another. Take the two on a trip around the room, talking about where you are as you move about. First you be the leader, and then when your child catches on, let him have a try. Some examples of relationships that you can use are:

Under the chair      Under the Table      Over the dog's dish.      Backwards, Forward, Over the Chair.

Later in the game, ask:

"Why did we say 'over the chair'?"      "What does over mean?"

"What does under mean?"      "To the left?"      "Backwards?"

By answering these questions, your child has to show or verbally explain the relationships; thinking of himself and the car or truck in relationship to something else.

Then say, "If we were not using a car and truck and I asked you to explain what backwards means, what would you do?" "In front of?" "Forward?" (By answering these questions the child has to think of either himself or some other object and put that into relationship with something else in order to explain the relationship of a particular direction.)

Building Blocks - A Very Important Material for Understanding Relationships, such as Size, Shape, and Position

If you are unable to purchase wood building blocks for your child, you and your child can make your own by using milk and cream cartons, of all sizes. Cut tops off and push them inside the carton and tape the side down. Decorate with paint, or cover them with material that can be glued on. Or the blocks can be made from lumber scraps, nailing pieces together to form various sizes; these can be sanded and varnished and will provide a number of meaningful learning experiences for you and your child.

When your child is playing with blocks, introduce the words that describe relationships, e.g., bigger, biggest, little, short, long, longer, fatter, thin; or shape words, circle, ball, round, square, rectangle, triangle, cube, position words, on top of, on the bottom, under, behind, in the middle, next to, in between, in front of, left, right, etc.

By using these words, your child will begin to spontaneously use them while thinking and showing these relationships with blocks. But also, you may supply a word that they may not know represents a particular relationship.

Ask: "Can you explain what you have built?" Which block is the biggest of the three?" "Why does a square block fit better there than a circle?" "What size of block do you need to make that row the same size or equal to this one?" and so on.

Blocks are one of the best mediums to represent relations, for use as symbols for something else, e.g., houses, bridge, people, cars, trucks. By using blocks a child has to think of the relationship of the block to the real thing, or what it symbolizes and when he/she builds something with blocks, they have to think of the many relationships of size, distance, balance, position, direction, weight, or reciprocally, as they play with the blocks these concepts and relationships are discovered.

Opposites - Another Difficult Relationship that Your Child Needs to Experience  
 Many Times.

One way to introduce words is to use its opposite at the same time. For example, when you observe your child playing ball, or when you play ball with your child, say: "The ball is going up; now it must come down."

Or on the see-saw. "Now you're going up and now you are coming down."

When opening a can, "I have opened the can. Now I will close it."

When observing two people of different heights, "Margie is tall and Rosalie is short."

Ask questions: "What is the opposite of sad?" "How do you know?" "Show me the opposite of dark." "What does opposite mean?" (Here let your child show you by the use of objects and actions on those objects to show the relationship that means opposite. For example: turning the TV on and then off explaining that on means when there is a picture and off means when there is not a picture. Or opposite means when "I'm sad when I look like this, and I'm happy when I look like this.")

An Activity for Helping Your Child Keep in Mind Several Directions and to Relate the Movement of His/Her Body Through Space in Order to Solve the Problem of Following the Directions Correctly

Say, "Let's play a direction game. First listen carefully to everything I say. Then, see if you can do as I said."

"Hop to your closet, open the door, look inside, close the door, tell me one thing you saw in your closet."

"Skip around the table, whisper your name twice, sit down, smile."

"Touch your toes twice, touch your elbows once, pat the top of your head twice."

"Open the top drawer. Look in the left hand corner, close the drawer, tell me what you saw."

Start with simple directions. Gradually build to more complicated instructions. The game should be challenging.

Ask your child to give you a series of directions. This will help him/her to think of sequences of places and things to do that can be related by directions.



What About Numbers -- Counting and Measuring

Now that you and your child have done a variety of things with ordering and classifying as a means of problem-solving, let us discover how the understanding of these two processes and the use of them are essential for knowing what numbers mean.

Many of your young children learn to count without knowing what the numbers mean. They don't understand that the numeral 3 stands for a group of something--whether it be 3 grapes, 3 boats, or 3 friends. A child who doesn't understand that numbers are based on real things that have been grouped together to form a certain set (classification) will have a difficult time learning mathematics and process of addition, subtraction, multiplication, and division.

As a parent, you can help your child learn number concepts in a variety of ways:

When you make a list, your child can help by counting the objects.

When you go to a store, your child can pick out the amount of goods you want to buy.

When you pay, your child can count the change.

When you classify things, represent them not only by a name but also by number, e.g., "There are 6 cans of soup on the shelf." "How many socks did you put in that pile?" "How many wood chairs do we have in our house?"

When you want to represent a certain amount with a number, let your child determine the number, e.g., number of miles to the school, number of glasses of milk from a quart of milk, how many days until a special day.

By using numbers to represent a variety of things, your child will begin to discover situations when number is constant, despite changes in the arrangement of things that it represents. For example, there are always 5 for dinner and it doesn't matter where they sit; there are always two miles to school; whether you walk, go by car, or by bus; that Sam is 5 years old and this doesn't change because he is taller than some other child who is 5, 6, or 7; or that there are only 6 toy figures and no matter how they are rearranged, there will always be 6.

## Using Real Things for Learning the Number System

As many times as possible, e.g., when preparing dinner, watching T.V., Reading, sitting, etc., take some real things such as buttons, peas, toothpicks, paper clips, stones, and ask:

"Will you arrange these things into groups from 1 through 10?"

(Work in a space where the child can put the different groupings in a line formation)

"How does each group differ from the one before and the one after?"  
(Your child can count each thing in each grouping and determine that the groups differ on the basis of 1)

Ask:

"If I wanted to make another group of 5 buttons, what could you do?"  
(Your child will be able to observe that there are 5 buttons in the grouping of 5; and after studying the other groupings, observe that he/she can put together a group of 2 buttons and a group of 3 buttons to make another group of 5.) (Or your child may put together a group of 4 buttons and the group of 1 button to make another group of 5).

Ask? "Is there another way to make a group of 5?" Can we take buttons away from some groups to make 5?"

(Allow your child time to discover that he/she can remove a certain amount from each grouping above 5 to make another group of 5.)

Repeat this sequence with other numbers.

Challenge your child with additional problems.

Group together several real things and then ask:

"Can you make 3 groups of 2 toothpicks?" "If you put them all together how many do you have?"

"Put them back into 3 groups of 2. Is there another way to group them so that when you put them back together there will still be 6?"

(Here your child should discover that he/she can make 2 groups of 3 toothpicks). When the smaller groups are put back together, ask your child to count each group as it is added, i.e., "1-2" (then add a group) "3", "4" (add a group) "5" "6". At another time, you can model counting by 2's when joining the smaller groups together., i.e., "2" "4" "6".

Repeat this sequence with other groupings to help your child discover that groups with different quantities can be arranged in more than one way to reach the same total.

### Making an Inventory

With pencil and paper, you and your child can make an inventory of things in the house; keep a written record of the results. Count everything. "How many chairs?" "Sofas?" "TV's?" "Tables?" "Cans of Soup?" "Windows?" "How many socks do you have?" "Shirts?" "Toys?" Periodically, ask your child to check the inventory with the things listed. "Has an amount changed?" "Why?"



## Measuring - How Long? How Far? How High?

Cover the numbers of a yardstick with adhesive tape. Then ask:

"Can you find out if some things are longer or shorter than this stick?"

(If your child doesn't line the stick up with what he/she wants to measure, ask, "How can you be sure that it is longer or shorter?" Help him/her to see that the stick has to be end to end with the thing being measured.)

Ask: "Do you think this table leg would be longer if you put your stick here?" (Move the stick up about 6 inches from the end of the leg.)

(Your child may respond with a 'yes' to this question; then have him/her closely observe what has happened to the other end of the stick so that he/she can observe that it extends past the length of the leg. Ask: "Is that amount of the stick extending past the table leg measuring anything?" (Be sure that your child observes that the stick isn't measuring anything at that end for this will show that it is impossible to say that the table leg is longer. This is difficult for your child to conceive, i.e., that a change in a position doesn't mean a change in length. To help him construct this concept, encourage your child to measure a variety of things with the stick and to keep the stick matched end to end the thing being measured. After child is competent in measuring a number of things ask your child to move the yardstick one way or another in order to observe that moving the stick does not change the length of the thing being measured.)

After your child has measured a variety of things in the house, remove the tape and help him to use the units of inches on the yardstick. Ask:

What is different about the numbers of the yardstick? (Your child should observe that each one is different, and that the numbers get bigger.)

"Do you know any of the numbers?" (Your child should be familiar with the separate numerals and recognize the series of numbers 1 through 10)

"Do you think that there is the same amount of space between each number?" (Your child will probably say 'yes')



"We call these spaces inches, so if I point to this number (1) and look at the space before the (2), I know that is 1 inch; if I point to the number 2, how many inches are before the number." (Your child will be able to answer these questions; if not repeat and start again with 1 and proceed by modelling the answers. Then ask your child.)

Help him to read the numbers 1.1 and 1.2 and that pointing to 1.1 means that 1.1 inches are before that number and that - pointing to 1.2 means that 1.2 inches are before that number.

Then ask: "Can you measure this pencil, and tell me how many inches long the pencil is?" (Don't expect exact measurements, but if your child approximates to the closest inch that is sufficient.)

Help your child to understand that the word inch refers to that particular amount of space shown on the ruler and we use this particular unit so that things can be made and measured and that when we say 2 inches, other people will know what length we are referring to.

Ask your child to measure other things around the house with the ruler. He will discover how to measure things longer than a ruler by using the ruler several times.

As many times as possible, ask your child, "Does changing the position of something (pencil, table leg, chair legs, door, bag, book, etc) change how long it is (or wide)? Often change the position of something, that is, move it ahead or back, or turn it around, put it vertically or horizontally and ask this question. If your child believes that the length does change, Ask: "Why don't you make sure by measuring it with the ruler, making sure you line up the ruler end to end with (whatever) is being measured. After your child has measured the thing in several positions, ask? Does moving (the thing) change how long or short it is?"

At other times, ask:

"When does the length of something change"

(Here your child and you can think of many examples, e.g., when things grow, when you add on or take away from, when you stretch something; also point out that when the length of something changes, does it still remain the same thing; "When you grow, will you always be a child?" "When a tomato plant grows, is it still a tomato plant? "When we add some to the side of a square, is it still called a square?")

Number Cards

Materials: Unlined index cards (5-inch by 8-inch is a good size) buttons (small) and needle with heavy thread or large snaps and a paper punch

Make several sets of number cards for the numerals from 1-10 by sewing the appropriate number of buttons (or snaps) on each card. No two cards for the same number should have the same arrangement of buttons. For example, the cards for the number three might look like this:



Some activities with number cards:

1. Place one set of cards on a table or on the floor. Be sure that they are not in order. Ask: "Can you put them in order?"
2. Place one set of cards on the table or on the floor. Ask your child to close his eyes while you hide one of the cards. When he opens his eyes, ask: "Can you figure out which card I have?"

These two activities are especially good for your child's coming to know how the set of 3 is different than the set of 4, or how the set of 5 is different than the set of 4; i.e., on the basis of one additional member.

3. Place both sets of cards on the table or on the floor. Point to one card and ask: "Can you find another card that has the same number of buttons to match this one?"
  4. Take one card. Say: "Now I have three buttons." Point to a card with two buttons and say, "Now I'm going to add two more buttons. How many buttons do I have all together?" "You count them." "Five buttons." "Three buttons and two more buttons make five buttons all together." "Can you find a card that shows 5 buttons?"
- Take another card and say, "I have two buttons. I need four buttons all together. Can you find a card to give me so that I will have four buttons?"
- Let your child choose a card and ask you to find another card that can be added to his/her card to a certain total.

### Using Numerals

After the previous activities have been done many times and you feel that your child understands the sets of numbers from 1 through 10, using real objects and number cards, begin to introduce the numerals 1 through 10 and ask:

"Can you draw some things that will go with each numeral?"

"After you have finished, put the drawing with each numeral?"

With only the numerals, ask: "What numerals would we use to show a group of two things and a group of 3 things?" "What numerals shows these two groups together?" Repeat this type of questioning for the other numerals. Extend it by asking: "I am thinking of a group of 7 cookies. I eat 2. What numeral shows how many are left?"

Ask your child to think of situations that you can describe with one or more of the numerals.



Number strips

Materials: Heavy paper (on 9--inch by 12--inch sheet), felt-tip markers or crayons, ruler, scissors.

With a ruler, divide the paper into nine 1-inch wide strips. Divide each strip into twelve 1-inch squares. Color and cut the strips as follows:

- Color one strip orange; cut it into 12, 1-inch squares.
- Color one strip green; cut it into 6, 2--inch strips.
- Color one strip blue; cut it into 4, 3--inch strips.
- Color one strip yellow; cut it into 3, 4--inch strips.
- Color one strip purple; cut it into 2, 6--inch strips.
- Color one strip brown; cut off squares so that it is a 10--inch strip.
- Color one strip white; cut off 2 inches and cut the remaining strip into two, 5--inch strips.
- Color one strip red; don't cut it.

If you can buy 1" molding from the hardware store and cut as directed above; you will need 96 inches of molding; the wood will last much longer and provide more satisfaction for your child.



try the following with your strips:

1. Let your child just enjoy playing with the strips. He/she will soon be making comparisons and experimenting with combinations and patterns. He/she will discover what can be added or taken away to equal the length of another piece; he/she will observe that the length of a piece doesn't change although its position will change; she/he will discover that several different pieces used in different combinations will all equal to the same length. And he/she will discover that the pieces differ on the basis of an exact amount and that each piece differs from another on the basis of how many of these exact amounts. (They won't necessarily call the amount 1-inch; naming it is not as important as understanding the use of this unit.)

2. At other times, ask questions like these:

"What can you find that's the same length as the brown strip?"

"The same length as two white strips?" "Ten orange strips?"

Put the brown strip alongside the red strip. Ask: "What can you add to the brown strip to make it the same as the red strip?"

Ask: "If I wanted to divide the brown strip into this size of piece (point to an orange 1-inch square) how many brown pieces would I have?" (Encourage your child to first approximate and then to conform his guess by using the orange squares and placing them over the brown to find out how many the brown could be divided into.) Do division problem with other sizes of strips.

Ask: "If I were to take a blue strip and a yellow strip, what strip shows how long the blue strip and yellow strip would be together?" (Ask this type of question, using the other strips in order to show multiplication; i.e., one strip  $\times$  another strip = a certain strip)

## An Empty Egg Carton

Remove the top from the egg carton; number the sections of the carton from 1 through 12.

Give your child things like, beans, paper clips, buttons, beads, peas, and macaroni to put in the counting carton.

Ask: "What does this numeral say?" How many things would you put in this section?" Let the child continue filling the sections on the basis of the numeral. This is a good activity, for the child discovers that it doesn't matter what he uses in each section as long as the different objects total to the number represented by the numeral.

This can be extended by asking: "When you put things into the different sections, can you tell me how they belong together?" (Here you are posing a problem of classification, where the child must decide on some attribute that will be the same or similar for all the objects in that section.)

## Water - One of the Most Beautiful and Fun Mediums for Problem-Solving

When your child takes a bath, supply different objects for your child to use in the water. Since water is a liquid medium, your child can discover many concepts that deal with volume, sinking, floating, He/she will discover relationships where he/she will observe what stays the same when other things change or what becomes different or changes when certain things happen. Some of the things to provide in the water are:

sieve, pitcher, plastic tops, balls, sponges, medicine dropper, small tubing, other size tubing, empty detergent bottles, basters, squeeze bottles, funnels, egg beater, blocks, straws, pumps.

When you are around and playing with your child, ask: "Why did that happen?"  
 "Why didn't it change?" "What did you do to make that change?"

"What hasn't changed?" Why doesn't (name of object) sink?" "What will make it sink?"



Using the Discarded Materials in your Neighborhood

You and your child can construct many different things using broken furniture, bleach bottles, engine parts, pipes, boards, broomsticks, hubcaps, and old pails. All of this and much more is usually found outside; make a collection of such rubbish and pile it up in your backyard or in a vacant lot nearby. Have available string, rope and heavy-duty tape.

Let your child construct with these materials. In this process he/she will be using many actions and objects that will show relationships dealing with length, measurement, direction, size, area, and number. He/she will make quality judgments and will confirm or disconfirm many predictions on the basis of particular effects or consequences.

Whenever possible, construct with your child; occasionally verbalize aloud why you did something the way you did, what you think will happen when you do something and all the possible alternatives regarding the use of something.

Occasionally ask your child questions dealing with these same processes; i.e., "Why did you do it that way?" "Was there another way to do it?" "What will happen when you do it that way?" "What can this be used for?"



PARENT'S COMMENTS

i. Evaluate one of the preceding activities. Answers these questions:

1. What did your child learn?
2. What did you learn?
3. What questions did you use and how did they help your child?
4. What problem(s) did your child solve?

Describe an activity you created for you and your child during this week of the use of the curriculum guide. Include the problem that was solved and the questions you asked.

Some Complex Problem-Solving Activities - Ordering and Seriating (Arranging in a Series)

Seriation is when your child's attention is focused on the sequential patterning of which items are placed; i.e., an item is correctly placed when the child simultaneously takes into account the placement of neighboring items and the sequence or patterns that the items form within the whole.

With 25 circles and 25 squares, all from the same color paper and start off with this pattern, then ask your child to finish the series using all the circles and squares. Your child may repeat the above pattern or create a new one. The important criteria is to have your child explain why each square or circle is placed in his/her series to support his observing the pattern preceding and the pattern that should follow.

To insure logical thinking, the items to be seriated must differ from each other in not too obvious a manner.

Present your child with ten sticks of different lengths and ask:

"Can you arrange these in any way?"

Any ordering or grouping is accepted and simply observed; your child may take the sticks and make the outline of a figure or group the sticks into groups of small or large ones.

Then you model a different arrangement by:

"I think I will arrange my sticks by length; the smallest goes first and then the next size larger than that one goes here and then this one. I know this one goes here since each stick is this much bigger than the one before it (show by lining sticks parallel to each other, end to end, marking off the differences with your finger). After ordering the five sticks, say:

"Can you order your sticks like I did"?

If your child needs help, place the first and second stick and show how much they differ by. Line the sticks up on a table edge or book (illustrate) so child can see how to keep the ends matched so that the different lengths can be observed.



After your child has correctly lined up his/her series of 5 sticks, ask:  
"Why are they ordered this way?" "How are they different?"

When your child has solved the problem of ordering the sticks from small to big, ask:

"If we start with our biggest stick first, what comes next?"

If child does not place next stick or answer correctly place the next two sticks and verbally describe why they go there, showing that each stick decreases a certain amount (measure the difference with your finger): finish ordering the 5 from big to little and ask child:

"Can you order your sticks from big to little?" (If necessary help child by ordering first two, explaining differences and by using edge of table).

Why did you order the stick this way?

This type of ordering should be done many times and with many different items; e.g., books, cars, dishes, glasses, anything that can be sorted in a way where items differ by some qualitative way. e.g., several shades of red, green, yellow,

e.g. increase) in number, size, shape, light to dark and if possible go to decrease) 10 sticks.

"How can you order these things?"

"Why did you put them in that order?"

"How is each one different than the one before, the one after?"

and very important for children's problem-solving is this question:

"What can you do to make these objects the same?"

In the stick game, your child would have to respond that a certain amount would have to be added to each stick before they were all equal. Your child may observe that each time he adds a certain amount to equal the stick following, more has to be added to those preceding.



This concept may be difficult for your child; if so, model how the problem would be solved by having available pieces of stick that can be used to make each stick equal in length; or use paper to put with each stick, marking these units into even parts so that child can observe by how much has to be added to each stick.

Say: When we think of any of our five sticks, we can see that it is made up of small pieces (place several small ones on top of the biggest stick so child can observe that a certain number of small pieces equal the largest one; then add:

"How many small ones do you need to equal the next biggest?"

Have your child place small ones over the next largest stick in the series, proceed to do this with all the stick and then ask:

"Now we know that the biggest stick is (use correct number) times as big as the small one; ... since we used (number of pieces) of these small pieces to cover up the big one."

Repeat this explanation for each stick.

This kind of exercise should be repeated several times until the child can answer such questions.

"How can we make each stick equal or the same?"

"How many small pieces will it take to equal the biggest stick?"

"The next biggest?" "How many should we take away from the biggest to make it the same as this one?" (Point to next one in series; go through each one and then randomly choose two sticks from the series and ask how many would have to be added or taken away from one to equal the size of the other stick.)

## More Games With Sticks

At another time, give your child 4 of 7 (not in order) sticks to place in order. You keep 3 sticks--after your child has arranged these 4 give the other 3 to your child and ask:

"Can you put these sticks with the other 4 so that all 7 are in order?"

During the activity ask:

"Why does it go there?" "How can you be sure?"

While preparing dinner, give your child 1 set of numerals of 1, 2, and 3, then ask your child:

"How many different ways can you arrange these numerals?"

There is a standard permutation formula  $3 \times 2 \times 1 = 6$ ; i. e., there are 6 different ways that these 3 numbers can be arranged. 1-2-3, 1-3-2, 2-1-3, 2-3-1, 3-1-2, and 3-2-1.

After your child has solved this problem, you can add the numeral 4. With 4 numerals there are 24 permutations ( $4 \times 3 \times 2 \times 1 = 24$ ) these problems are for the purpose of helping your child discover a systematic method of achieving a complete set of possible arrangements.

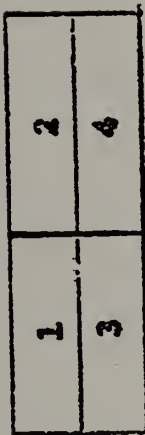
A good game is to see how many different ways the children can arrange themselves on one side of the table; if there are 3 children then there are 6 different ways; with 4 children, there are 24 different ways.

A different variation of this game is to have children make different arrangements with concrete objects; e. g., three different colored glasses, 4 different colored socks, 4 different colored pieces of paper, or 3 blocks of different size.

When your child is just beginning to pay attention to the method of constructions and the total number of possible permutations, it is advisable to have only 3 or 4 different objects.

## CROSS CLASSIFICATION

Obtain square pieces of cardboard or wood evenly divided into 4 spaces as shown

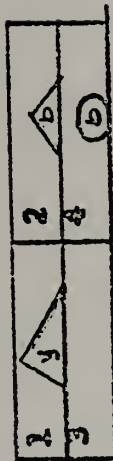


Have available 2 to 3 sets of the following geometric shapes: Squares, triangles, circles, diamonds. Each shape should come in 4 different colors.

Blue, yellow, red, & white

Next, you choose from among these shapes 3; a yellow triangle and put it into space 1, a blue triangle for space 2, and a blue circle for space 4; then ask your child:

"What will go into space 3?"



Allow the child time to solve this problem; if unable to help by verbally describing the two dimensions and pointing to the squares as you explain:



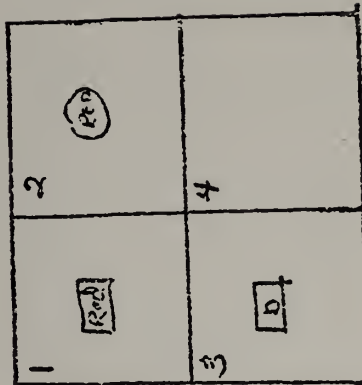
"To check the squares there are two triangles; the first is yellow and the second is blue; then on the next 2 squares we don't have anything in the space but in the 4th space there is a blue circle; blue because it is the blue triangle. For space 3 you would put what color?"

then say, "Now you have made a matrix with the shape the same on the rows and the color the same on the columns.

If child cannot answer these or does not understand a matrix, you proceed to place the correct circle in square 3, explaining why you choose it. "Here we would put a yellow circle so that it makes a row of two circles and since the blue circle and blue triangle match in color the circle in space 3 must match the yellow color of the triangle."

After your child has solved this problem place another 3 shapes on and ask your child to choose the missing shape. When your child has placed a shape in space 4, ask:

"Why did you put a blue circle in space 4?"





The next step is to have the child complete a matrix with only 2 shapes that share some attribute of one dimension and differ in the attribute of the other dimension; e.g., put a yellow circle in space 1 and a blue circle in space 3 and then ask,

"Can you find the missing objects for the spaces?"

The child has to determine that columns are shape and that rows are color.

Yellow circle                      blue circle

Yellow triangle                    blue triangle

Your child can put in spaces 2 and 4 a yellow and blue triangle or square or diamond each of these would be logical and complete the matrix with two dimensions considered.

After your child has solved several of these matrix problems, use items instead of numbers, e.g., picture cards of different sizes (or toy cars, airplanes, boats, and trains) and arrange two in two different spaces as such:

|            |                   |
|------------|-------------------|
| RED<br>CPL |                   |
|            | white<br>airplane |

or

|              |               |
|--------------|---------------|
| big<br>truck |               |
|              | Little<br>car |

Noticing Things Around You

On frequent trips with your child, whether it be going for a walk, driving to the store, taking a bus into town, or going to visit relatives and friends, there are good moments for problem-solving activities for you and your child, and in many cases, a way to make this travel time more enjoyable.

1. If possible try to arrange some of these trips so you have time. Don't be in a hurry, but relax and look, talk, and be curious wherever you are, whether in a store, on a street, or in a playground. Your only objective is to be aware of what is there and to let your child explore, ask questions, touch and manipulate objects; and for you to guide interests by questioning and exploring objects yourself.

2. Questions to build upon your child's interest are:

"What is it?" How does it feel?" Is it like anything else you know?" How is it alike?" How is it different?" What functions do you think it serves?" How did it get there?"

3. Talk about what the two of you experience.

4. Look and touch and manipulate; describe what you are thinking so that your child can hear how you compare and categorize objects.

## Creating your Own

Making up riddles and trying to guess the answer are excellent means of problem-solving; and they are fun, especially when riding in the car, waiting, for a bus or ride, preparing meals or when watching commercials on TV.

You and your child take turns; think of something, and make a riddle about it. For example:

What smells fresh and clean, makes suds, and taste terrible? (soap)

What feels like water, comes in small fancy bottles, and smells beautiful? (perfume)

What is yellow, gooey, moist, hot to taste, and eaten with hot dogs? (Mustard)

Or make up riddles that describe something you use in the kitchen?

What is long like my mixing spoon, made of metal, and has on the end something that does around and around? (Egg beater)

What is big and white and if I stand on my toes, <sup>is</sup> about the same size as I am? (refrigerator)

Riddles describing a color or color combination are fun, e.g.,

What has five different colors and is about the same size as my saucer? (Pot holder)

What is white and has blue and green spots? (Floor linoleum)

Making a Puppet is better than Buying One

With an old ball, ask:

"How could we make a puppet with this ball?"

(On the table, have another old ball for yourself, some glue, 2 paper towel rolls, magic markers, scissors, fabric, buttons, fringe, feathers, ribbon, or anything else that can be used for decoration.)

If child does not suggest cutting hole in the ball large enough for the paper towel roll, ask:

"If I were to cut a hole in the ball here, could it be used for something to hold the puppet with?"

After discussing the use of the paper towel roll, cut a hole into the ball just large enough to insert the roll. The roll should extend below the head so that clothes can be attached. Then ask,

"Would you like to make a face on the ball?" "On the table, there are some other items for you to use to make some clothes and whatever you like to put on the puppet."

Then, you proceed to make your puppet along with your child, verbally describing some of your actions and how you make decisions as to how you were going to decorate the puppet.



With the finished puppets, you and your child decide on a simple skit or play to put on for someone else. This is a good opportunity for you to write down the skit and for your child to have to think of the sequence of events that will be played out. Often ask questions that require your child to think of the logical sequence of events for example:

"If Tammy came home and found the candy bar gone, would she say that?"

Encourage your child to think of the thing that would most likely follow some other event or action. You can facilitate this by your part in the play and suggesting what your puppet will do or say.

This activity can develop into a major event by planning what stage you will use, (A decorated cardboard carton or small table are two possibilities) what time it will be presented, if tickets will be sold, etc. All of these decisions are problems to solve, so ask questions and point out alternatives in order to help your child think of the best possible solution. For example,

"If we use the table for a stage, where will we stand?"

"How will we remember our parts?"

"If we wait until tomorrow, Jackson will be home and you can invite him to see the play."

Most of the activities described in this book and in all the other interactions that you will initiate that promote problem-solving, involve the use of language. One of the most important means to initiate problem solving is phrasing and asking questions.

As your child gets older, verbal skills become more important as the way to represent what he/she knows and to express their feelings. With this in mind, it is important that you be aware of how you use words. Some things to remember are:

1. Children need to hear all kinds of words:

Words that tell what they see

Words that tell what they do

Words that tell how things look

Words that tell how they feel

Words that describe how things work

2. Children need to hear language in order to understand how you or someone else is viewing a situation and how you feel. Your child needs to hear these view points often since it is difficult for them to infer what you think or feel. When your child points to something and says "stop" or when your child gives a one or two word response, you can often expand on this phrase by describing the context that you are in; e.g., "If you want Jimmy to stop that, it may help to ask Jimmy to stop putting his feet on the table because it makes the table shake and you can't build." (This explanation is needed since your child thinks Jimmy should know why he shouldn't put his feet on the table -- if Jimmy is young, he won't be thinking of your child's point of view.)

--OR--

"Clyde, you just walked away and I don't know what you don't like. If you tell me then I can understand and perhaps there is another way you can play with the truck."

--OR--

"Tonia, you tell me what the chair looks like from where you are standing, and then I will describe to you how it looks from where I am. This will help us to know what each of us is seeing."

Using language to talk about what you think, see, do and how you feel may take more time and sometimes effort, but it is essential if you and your child want to become more proficient in problem-solving. Avoid many interpersonal conflicts and become better prepared to adapt in our society that values competency with words.

Another activity to promote problem-solving while you're driving in the car, on the bus, or in general, just waiting for something.

Ask:

"Can you think of different things that start with the same letter and the same sound as your name? Let us try, I will help you and then I will do it to."

Ask:

"What's your name?" (Child responds with name)

"Where do you live?" (Child tries to think of a place that begins with the letter of his name; e.g., if his name was Billy, he could say Boston.)

"What do you eat?" (He/she could say, 'beans')

Other questions: "What sport do you like?" "What do you like to wear?"

"What's your favorite activity?"

You play the game; have your child ask you questions; this is a good problem that stimulates his/her thinking of questions that can be answered with a one word reply.

Later, you can ask your child: "I am going to give you a name that starts with a different letter and you see if you can give me answers that start with the same letter as the name."

"I know a girl named Luellen. Where do you think she lived?"

Your child may say Longmeadow. Continue with your questions. Whenever your child has difficulty thinking of an answer you may supply one by saying: "There is a city named 'Amherst'; what do you think 'Amherst' begins with?"



A Sandbox - A Fantastic Place for Problem Solving

If possible, construct a sandbox for your yard. Otherwise encourage your child's play in sand wherever it can be found. Provide a variety of objects with your child, especially containers of different sizes. Play with your child, verbally describe your actions with objects, eg., "I'm going to make two piles of the same size. If I use this cup, it should not take too long for it is the biggest container here; I think it is going to take at least 8 of these to make one hill." When your child is playing in the sand, ask questions that will help your child to discover certain relationships as well as to know what he/she is thinking while he plays in the sand. For example:

"Why does your car move slowly in the sand?" (Child has to think about the relationship between the size of the car, the type of push he used, and the quality of the mixture of the sand.)

"Does your cup have more sand than mine?" "How do you know?"

"Can you remake the pile that was just pushed flat?"

PARENT'S COMMENTS

1. Evaluate one of the preceding activities. Answers these questions:

1. What did your child learn?
2. What did you learn?
3. What questions did you use and how did they help your child?
4. What problem(s) did your child solve?

Describe an activity you created for you and your child during this week of the use of the curriculum guide. Include the problem that was solved and the questions you asked.

A Same and Different Activity with Carbon Paper

Materials: White paper      carbon paper      pens

Put a piece of carbon paper between two sheets of white paper; draw a picture of anything on the top sheet; remove the carbon and you will have two identical pictures. Make a series of pictures and then arrange 4 into a group, with two being the same; ask:

"Can you find two pictures that are the same?"

"Why are they the same?"

Make a series of three pictures with two the same and ask: "Can you find the picture that is different?"

Have your child prepare several sets of drawings with the white and carbon papers.  
Ask:

"Can you arrange or put into a group 4 of your pictures with each one being the same in some way?" "With two being the same in some way?" "Three?"

"Can you choose a group of 3 or 4 pictures and then ask me how they are the same in some way?" "How one is different from the other?"



Materials: A large jar with a wide opening, an egg carton, four to five each of twelve different things; obtainable from a hardware store or from your work bench area: 1/2 inch screws, 1/4 inch screws, 1/2 inch nuts, larger nuts, larger bolts, larger washers, small metal washers, medium metal washers, large metal washers, plastic washers, and rubber washers.

Fill the jar with all the objects then ask: "Can you sort these into the different compartments of the egg carton?"

After your child is finished, ask:

"Can you tell me why the different things are grouped together?"

"Is there another way that they could be grouped?"

(There are many ways that these objects could be grouped together; let your child decide the basis for his/her sorting.)

After some sorting, ask: "What could you do with this group, or what would you have to change so that it could be joined with this group?" "What can you do with these two groups to make one larger group?" (For example, by observing the separate groups of nuts and bolts, thereby making a group or groups of bolts with nuts.)

There are many things around the house, bobby pins, toothpicks, paper clips, buttons, coins, etc. that can be put together and sorted or classified into different subgroups and regrouped into other groups by adding to or taking away or by thinking about different attributes. Whenever you see the opportunity, discuss the way things have been grouped in your household; ask your child to regroup things (cans on shelf, toys, table ware, books, etc) and don't forget to ask 'why?'

Young children, ages 5 & 6 are only beginning to have the ability to spontaneously consider something from more than one perspective; i.e., it is difficult for them to understand, at the same time, how he/she and you can view a situation, feel, or see an object. Very often children at this age respond to something on the basis of how they understand it, how they want to understand; and not, necessarily, on the basis of how you would understand something or want them to understand. Some examples will illustrate this important concept.

You and your child go into a store to buy your child's friend a birthday present. Your child immediately says, "Let's buy this car." His choice is first guided by the fact that he likes the car; not thinking of what his friend may like, although he may say, "Let's buy this for Jamie." This is not a selfish act on your child's part, but is due to his/her inability to coordinate mentally at the same time, what his friend may like, the choices that are available and what he likes.

You are in a hurry and preparing breakfast; your child is sitting at the table and you are wondering, why doesn't he/she set the table: I have told her/him many times to help out when we are in a rush. In this situation, it is not your child's intention not to help, but his inability to simultaneously think what you are thinking at the time and his own thoughts.

Your two children are fighting; they have been told numerous times not to fight in the house; your younger child, age 6, says, "Billy turned off the TV and I was watching it." Billy, aged 11, responds, "Yeh, but he knew grandma was asleep and he didn't even turn it down." In this situation, the older child is able to coordinate more than one thing in his mind at the same time; i.e., here, he is thinking that since his Grandma was trying to go to sleep and that she was tired, the TV should be turned off; also he was thinking that his younger brother should allow him to turn the TV off. However, the younger child was not thinking what his brother was thinking, nor kept in mind the fact that his grandma was trying to sleep in the next room; the younger child's thoughts were focused on what he was seeing on TV and it was not his intention to try to keep his grandma awake or to try and provoke his brother by watching TV.



In each of these examples, there is a case where a child, around 5 and 6 years of age, is behaving on the basis of thinking about one or two things, centering on that and unable to coordinate a variety of other people's thoughts or events with is own. Through further experiences he will be able to do this more advanced thinking. As a parent, it is important that you keep in mind this inability on the part of your 5 and 6 year old child. Don't expect him to think as you do; he can't; it is impossible; he will need time and many more experiences before he can think about what you may be thinking and consequently before he/she can act on the basis of thinking about several possibilities or consequences of his actions.

There are things that you can do to facilitate his/her ability to think of different points of view. First, and most important, is your verbal explanation of actions; e.g., when you restrict your child from doing something, it is important to explain why, so that he/she can then have this thought and associate it with his/her behavior; otherwise, your "no's" and "stop that's" are arbitrary, listened to because you are in power or in the authoritarian role; however, with verbal explanations for actions, you child can begin to think of these before he/she acts, thereby reducing your need to always re-strict, command, punish, actions that, for your young child, may begin to have the meaning that he/she is bad and that adults are people to be afraid of.

Other ways to help your child is to verbally describe your thoughts concerning why you do things the way you do, how you see a situation and what it means to you. By talking more about your thoughts with your child, he/she can begin to anticipate these in relevant situations and therefore, guide his behavior on the basis of your thoughts. Also by verbally describing your thoughts you are helping your child to understand more about an object or situation. If you start this behavior, your child will begin to model and will soon get into the practice of talking about what he/she is thinking, these thoughts can also help you to understand how your child thinks and more about a situation and objects.

And don't forget questions: "Why do you think that?" or "What are you thinking?" or simply "Why"?

And again, if you ask more questions, your child will ask more questions, and learn that there are usually logical reasons for actions and consequences, as well as logical consequences for particular actions. All this totals into effective problem solving.

Materials: Crayons paper

Doodles are a way to help children think of things from a different point of view; first draw something, like a table as it appears on the side of the paper; then draw the table from above on the other half; or a tree from the side position and then a picture from the above position or a hamburger from the side and then from above.

Then ask, "Now, can you draw something as it would look on the side and then from above?"

"Why don't you draw three different pictures and I will try to guess when I am looking at them from above and from beside."

Your child may need help with this activity, for it is difficult for him to think of how something may look from above and from beside. It may be helpful to ask, "What can help you to know how something looks from beside and from above?" You would like your child to suggest to go to the object and look at it from a side position and then to look at it from above. After he/she has done this, he/she may be able to draw something that would be similar to each perspective. Don't expect accurate drawings and if your child thinks that he/she has shown it as best he/she can, accept that.

Another good variation of this activity is for you to stand beside something or to look at something from above or below, and ask, "Can you explain how the object (or thing) looks to me when I stand here?" After your child attempts to explain, have him/her come next to you to see how the object looks. You should take the other role of describing the points of view depending on where your child stands; your explanation will help him/her understand how to describe that particular point of view.



What Am I Thinking?

Think of something that both you and your child knows, e.g., your kitchen clock the TV, a picture over the piano, your dentist. It can be anything as long as it's something your child knows.

Start by saying, "I'm thinking of something. Your job is to find out what it is I'm thinking of by asking me questions." Tell me when you think you know what it is and we will stop the game. If you guess what I'm thinking, it will be your turn to be it."

At first, you may want to help your child think of good questions. Ask, "Would it help if you knew whether or not I was thinking of a person?" "What questions could you ask to find out if it's a person?"

Or you may want to give some clues. "It's something you see every day?" "It helps us to get to school on time."

After you and your child become proficient in guessing things that are familiar, try to think of things that are not as familiar, but are still in the house, or wherever you are. For example:

"I'm thinking of something that we use only a very few times during the year.  
But when we do use it, it is because something has happened to our electricity.  
What am I thinking?" (Candles)

"I am thinking of something that is in this room but we don't see it; it is covered by something else and its function is to make us more comfortable." (Seat cushion)

You and your child take turns telling a story, leaving out certain words. Use sign language to give the meaning of the missing words and let the other person fill in the missing words. For example:

### Story

My cat walked \_\_\_\_\_ the car.

She ran \_\_\_\_\_ the driveway.

### Motion

Make under action with your hand.

Make down action with your hand.

The story continues: Under the fence, up the hill, around the block.

Play the same game leaving out action words such as walk, run, skip, jump, hop. Act out the word you are leaving out for the other person to guess.

This game can develop into the popular activity of improvisation; for this, you and your child act out all or more of the sentence, saying, song title, poem, story. For this activity, it is helpful to use some symbols for clues. For example:

When you point to your ear, the word you are wanting the other person to guess sounds like the word you are acting out.

Use fingers to show how many words in the sentence, title, etc., one finger - one word, two fingers - 2 words, etc. or indicate by fingers that you are acting out the first, second, or third word. Sometimes the second word is easier than the first.

## Problems in Social Situations

Many conflicts arise for your child that involve interactions with other children and adults (including yourself.) They may result from not wanting to do something, not sharing a toy, not doing a task, not going somewhere, or playing a certain game. Whatever the source of the problem, it is more likely to be solved by your child through the processes we have continuously emphasized in these activities; i.e., becoming aware of the possible relationships between the events in the problem situation, especially becoming aware of the viewpoint of the other people involved. When interpersonal conflicts arise, ask these questions:

"What do you think I am thinking (or feeling)?"

"What do you think (name of friend or friends) was/were thinking?"

"Why do you think that (name of friend) wanted to play that game?"

"Why do you think that I want you to do this?"

"What are you feeling?" "Why do you feel this way?"

It is very helpful to verbally describe for your child what you are thinking and feeling for it will be difficult for your child to know accurately what your thoughts and feelings are. And very often, they will not be aware of the reasons you want them to do something, even though you think they should know, for you have told them many times before. Remember that it is impossible in most cases, or very difficult, for children at 5 and 6 years of age to generalize from one situation to another, especially when time has separated the events. And as common, is the fact that their desire or interest will often prevent them from considering the why's and reasons for other's behaviors.



A Game for Identifying Problems

There are many situations where you can make mistakes for your child to discover and correct. Or situations where you can create a purposeful problem for your child to solve. The key to these situations is to create a conflict for your child, where something that would normally be there, or happen, does not; or when something that is expected to happen does not. The following are some examples to spur you on.

Begin mixing something with a very small spoon; and say aloud: "I wonder why I can't mix this very well today?"

When something has spilled, begin soaking the liquid up with a sponge already absorbed with water and say, "This sponge does not seem to help me at all." "Why?"

When some object is out of reach and difficult or impossible to retrieve with your hands, say, "How can I get the (name of object)?"

Purposefully unscrew a light bulb partially, and then turn on the switch and say, "Now, why doesn't that light go on?"

Before you open the liner of a cereal box, say, "How can we open this liner so it won't tear?"

Rig up a rope between two chairs so that it makes a complete loop; if possible, use pulleys at each end so that the rope can easily go around. Put a small bucket on the bottom part of the rope between the two chairs and then place some object on the seat of one chair, and say: "Can you use only the bucket to get the object from this chair to that chair?"



This is an excellent activity that should be much fun for your child as well as an excellent problem, for the child will observe that he has to pull the rope in the opposite direction of where he wants the bucket to go.

At some point ask: "Why do you have to pull the rope that way in order for the bucket to go that way?" (Point these directions out.)

Your child should be able to respond that the rope is just one big piece and the bucket is being pulled behind him/her.

Take one of your child's paint brushes and tape on the end of the brush another 8 inch stick with masking tape; arrange some paper and paints for your child and ask: "Will you paint something with this brush?"

Your child will immediately notice that with the extension on the end, the brush makes much larger patterns on the paper than if it were normal size, using notions that he/she would normally use with a regular brush.

"Why does that happen with your painting?" (Your child may observe that since the distance from his hand to the end of the brush has increased, the lines on the paper are increased.)

Some "What if's"

Cause and Effect relationships can be clarified by asking questions; there are many situations in your house that can provide the context for simple cause and effect relationships: For example:

"What will happen to the milk if we add chocolate syrup to it?"

"What will happen to the ice cream if we put it in a hot oven?" "Why"?

"Would the ice cream go back to its original form if we put it back into the freezer?" "Why not?"

"What will happen to a balloon if we poke it with a pin? (Confirm your child's answer by poking a hole in it.) Why did it move like that?"

With a balloon, blow it up and then let it go, then ask: "Why does the balloon move away so fast?" (In these situations, your child should observe and infer, with your help, that all the air can't get out of the hole at once, and so some escapes, the air around the balloon pushes down on the balloon and this pressure makes the balloon go forward.)

"What will happen to red paint if we mix it with yellow?"

"What if the sun stopped shining?"

In many situations, a particular effect will occur such as water evaporating from a dish left out in the sun, unless something is done: some action, so that the effect will not occur or will be altered (putting a cover on the dish). Whenever possible ask your child what you or he/she could do so that an effect will not occur.

"If we don't want the ice cream to get too hard, what should we do?"

"If we want to make the jello firm in a hurry, what should we do?"

### What is Missing?

Place a variety of kitchen utensils on the table; you and your child look at the array of objects on the table. You hold up a screen (cardboard, towel, newspaper) while you remove one object; then ask your child to try to guess which object is missing. After he/she has guessed, let your child hide an object while you try to guess.

After playing with a random set of objects, remove these and place a set of objects on the table that are related; e.g., eating utensils, and assortment of different labelled cans, different crayons, different colored socks, and then continue with the guessing.

Patterns

Materials: colored plastic toothpicks or poker chips

With your child watching, lay out the toothpicks or chips according to a set pattern. The design you make should consist of a regular color pattern repeated over and over. As you lay down the toothpicks, help your child perceive the patterns. Then ask: "What comes next?"

(This is an excellent activity for your child to observe the relationships of what comes before and after one arrangement or one pattern of a color.

After he/she has repeated the pattern correctly ask: "Will you start a pattern for me, and I will try to finish it?"



Accidents in the Home, Neighborhood, Store, or While Visiting

Many accidents can be used to help your child construct additional knowledge.

When an accident occurs, ask your child how it happened, what the results were and how to prevent future ones. Some common accidents are:

When something over cooks

When a leak develops

When something spills

When something gets flooded or water over flows

When something breaks

Helping your child to construct the reasons for the accidents, observing the results and thinking about how to prevent future ones will, in most cases, reduce the number of accidents in the household that may be caused by your child or by yourself, since you, too, will become aware of the causes and consequences.

Most Anytime is Good for Problem-Solving

At bath time.....

As you or your child are scrubbing toes....."Why is that toe bigger than the others?"

"Why does the soap turn into suds?"

"Now I will scrub your back and I am going to go around in little circles. Can you feel the circles on your back? In what direction are they going?"

"Let's compare our hands. Do you think they made this bar of soap to fit my hand or your hand?" "Why?"

As you cook.....

talk about what you are doing; describe your actions and the effect that your actions have on objects.

"I am going to slice the carrots as small as possible. If they are small, they will cook faster and I need to make dinner in a hurry."

"I will add a little garlic; it was just a small amount since garlic has such a strong flavor that if I were to put in more, no one would like my sauce."

"I wonder what I should do with the old bread. Do you have any ideas?"

"Would you stir the sauce for me?" Look, there are some bubbles in the sauce, where did they come from?" (Your child may not deduce that they are air bubbles, if not, ask, "Does any air go into the sauce while stirring?", and then describe the fact that the air is coming out as the mixture gets hot.)

Parent's Comments

1. Evaluate one of the preceding activities. Answer these questions:

- 1. What did your child learn?
- 2. What did you learn?
- 3. What questions did you use and how did they help your child?
- 4. What problem(s) did your child solve?

Describe an activity you created for you and your child during this week of the use of the curriculum guide. Include the problem that was solved and the questions you asked.



Many Uses for Pictures and Index Cards

**Materials:** Pictures of things in your house such as a picture of a chair, of a stove, a baby, a plant, dishes, a mirror.

Glue, scissors

paste the pictures on white 5 by 8 inch index cards

place the cards face up on the table. Point to one card at a time and ask your child if he can find a real thing that matches the picture.

Play the game again; only this time you point to the real thing and ask your child to pick out the matching picture cards.

**Ask:**

"What is the difference between the real thing and the picture?"

(Your child should begin to observe that pictures are two-dimensional and the real thing is three dimensional; if not, ask "When you look at the chair, how much more can you see than you see in the picture?")

Another use of the cards is to draw a sentence with them

put the cards picture side down. Your child picks 3 cards and turns them picture side up. If he can make a sentence using the things on his cards, he/she keeps them; if not, you take your turn. Keep playing until all cards have been used. This is a good opportunity to use language in an expanded way; e.g., if you drew a picture of a chair, a towel, and a dish, your sentence might be:

"I stood on the chair and reached for the dish and then, the dish fell on the towel and it didn't break!" "(Wow, was I lucky)"

Another use of the cards is for a riddle game.

Place the cards face up on a table. Make up a riddle about one of the things on the picture cards. Ask your child to point to the card that answers the riddle, e.g.,

"pick up a picture of something that rhymes with pup."

"pick up a picture of something that has many moving parts."

After your child selects the right card, ask your child to make up a riddle for you; and when all the cards have been used, play this game.

Look at all the cards before turning them face down in front of you. One begins by describing an object pictured on one of the other person's cards. This is both a feat of memory and giving an accurate description. The other person must remember if he/she has it (can peek if necessary) and if so, turn it over and give it to one describing. Alternate turns. At the end of the game, guessed cards, are counted to find out who is King Memory.

## Shapes Make Letters

Materials: Cardboard or heavy paper      scissors

Instructions: Cut out shapes that make letters:

Straight lines--long and short  
Half circles--big and little

### Activity

Give your child a few shapes at a time. Start with two straight lines--one long, one short, and a small half circle. Ask:

"What letters can you make with these pieces?"

You also take some pieces and make a variety of different letters from the same pieces; this is an excellent activity for helping your child understand that the lines and shapes can be used in different ways and that all the letters can be formed from the same few pieces. They can see that the pieces themselves stay the same but that the letters change.

And remember this is a very important understanding for your child; i.e., what feature of something stays the same across changes; and what kind of action is necessary to keep some feature or element the same across change and what actions are necessary to change other aspects of the situation.

Another variation with these cut pieces is to use the shapes to start a picture. Place several shapes on a piece of paper. Say, "This is the beginning of a picture. Can you finish the picture?"

Have your child arrange a few shapes and then you finish the picture.

This is a good activity for understanding parts of a whole and how parts can be re-arranged to form a whole.

### Matching Line

**Materials:** a child's clothesline, (a rope or string across a wall at child's height) clothespins (at least 26) a collection of real things, pictures of things

### Activity:

Print a letter of the alphabet on one side of each clothespin  
Write each letter of the alphabet on a separate piece of paper

Lay the pieces of paper with the letter written on them on the floor--out of order. Put the clothespins on the line in order. Ask,

"Can you hang up the letters of the alphabet in the right order?"  
(If or when child knows alphabet, use unmarked side of clothespin.)

Another variation is to go from end to the beginning; i.e., start with the last letter of the alphabet first and ask, "Can you hand up the letters of the alphabet, starting with the last first?"

### Or--

Use a few clothespins from the middle of the alphabet and ask, "Can you finish the alphabet line in the right order?"

Another excellent activity with the clothespins that helps your child understand ordering or putting things into relationship is to have your child look for real things to hand from each clothespin; e.g.,

"Can you pin some things on the clothesline that go in order?"

(Your child may choose a variety of things and pin them up; it may not appear like an order to you, for your child, it is.

Ask, "Can you explain how each of these things is related to the one before it and the one after?"

You select some real things and hang them on the line, verbally explaining to your child how each is related to the one before and the one after, and how the whole series is a total set.



select a small sock, a medium size sock, and a large sock, pin them up, going from small to large; and then pin up a small mitten or glove, a medium size and a large size; small belt, a medium size belt and a large belt; Explain that each series is a set of three things, and for each set of three, you arranged them from smallest to largest. Then ask your child to arrange the three series of sets from biggest to smallest and then to arrange the objects in a different relationship with the three smallest objects together (sock, glove, and belt) then the three medium size and finally the three biggest together.

This will help your child understand how objects can be arranged differently and also that there are many different relationships between objects.

By leaving the clothespin up with clothespins nearby, (some with letters on and some without) your child will have the opportunity to solve many problems of putting things into relationship. He/she will begin to understand the base for our number system, e.i., by putting a series of things in order on the line, he/she will see that the second is larger than the first and smaller than the third which is the same reasoning that is necessary for understanding that '2' is one more than '1' and one less than '3' and that '3' is one more than '2' and one less than '4' or that the difference of '1' between all the numbers from 1 to 10 and that 3 is 2 more than 1 and that 6 is 3 less than 9; this is a hard relationship to understand and your help will be made by hanging a variety of different things on the clothesline explaining the relationship between each and all.

Describe an activity you created for you and your child during this week of the use of the curriculum guide. Include the problem that was solved and the questions you asked.

## sorting and Classifying

Grouping, categorizing, and making sets are all forms of classifying. Putting a collection of various things together into groups is a very important logical skill. These groups can be based on one or more common factors, such as size, shape, function, color, and origin, depending on the particular reason that one uses for sorting. Classifications are a major part of our life. Grocery stores sort their goods into various sections, bins, shelves, etc., on the basis of some reason; you sort your clothes into various drawers and closets on the basis of some reason. Your child sometimes puts away toys on the basis of some order that he has decided. Knowing how to sort and organize is an essential process for making our world knowable.

You and your child are usually engaged in some level of classifying as you go about your daily activities; on the basis of many past experiences, it becomes a spontaneous process. For example, as you pick out items from the produce section in the grocery store, whether you chose a certain head of lettuce is most determined by thinking how it compares with what you have determined is a good head of lettuce; that is, there are certain characteristics or attributes of heads of lettuce that define a grouping of good heads and certain features that define or form 'bad' heads of lettuce. When you meet someone new, you spontaneously form judgements of that person on the basis of observing certain attributes of that person that you have grouped together and that define for you a particular personality. e.g., this new person doesn't look at you directly; for your personality, this trait has come to mean that the person is shy, ill at ease, because from your past experience other individuals with this trait have proven through their other behaviors to be shy, and ill at ease.

In order for your child to use the process of classifying, he/she relates things and objects on the basis of sameness, similarity, and difference, a basic understanding that has been referred to in many activities in this book. Many questions have been phrased using these words., e.g., "How are they different?" "How are they the same?" or "Similar?" When your child orders a series of things, he/she is determining that they are the same or different on the basis of a certain amount or quantity, and in most cases, each thing that is ordered is usually the same in some attribute or different in others, for example: measuring cups are different on the basis of size; but all are the same on the basis of being measuring cups; or made of certain materials; or all the glasses of water are different on the basis of having different amounts of water and the same on the basis of being glasses with water; and the whole series can be grouped together by adding enough water in each glass to make each one the same.



For the following activities, you and your child will be grouping things together on the basis of some characteristic. You will ask questions as "Which one belongs to this group?" "Why?" "Which one doesn't belong?" "Why?" You and your child will discover that there are many different ways that things can be grouped together to form subgroups and that subgroups can be joined together to form one larger group on the basis of some dimension, characteristic, etc. and that all members of one group are the same on the basis of one or more particular characteristics, and in some cases, different in many other ways. You will discover that by adding to or taking away from some things that they can be regrouped into another group, for example by starting with a large group of apples, you can break this group into smaller groups on the basis of different color, and this group into smaller groups, on the basis of those that you want to eat and those you don't want to eat. Here you are adding on the number of characteristics or attributes of apples in order to create the group of those that you want to eat, or through the process of grouping or classifying your child will discover the relationships between prunes in a box, stewed prunes, prune juice, prune pudding, and prune pie. In this example, there is the important understanding of what transformation or change is involved in order to make the different states of prunes. This process of changing should be shown to your child so he/she understands what has changed, what stays the same, and why. Another example, but more abstract is the understanding that when you ask your child to group all the forms of dogs, he/she will put a color photograph of a dog in one group, a drawing of many dogs in another, a stuffed dog in another, a statue of a dog in another. Each of these is a different form of 'dog' but all the same in being a representation of an animal that has 4 legs, a tail, and barks.

#### AN EMPHASIS ON CLASSIFYING

Something to do with Laundry

When you sort laundry, verbally describe for your child the piles that you make and why you have decided to sort them this way. After you have sorted a number of clothes ask:

"Can you tell me where this goes?" "Will you sort this pile of clothes?"

"Is there a different way that we could sort our clothes?" "You decide how to sort this pile of clothes."



### Store Riddles - Where Do I go?

Knowing where to buy things involves classification, or why certain things have been grouped together, how they are the same in some way and different in other ways. Do the following riddles with your child as you go shopping in a supermarket, department store or shopping center.

These riddles may have more than one answer. Encourage your child to think of all possibilities. For example, you can buy books at the bookstore, the grocery store, and sometimes at the drug store.

"I need eggs. Where do I go?"

"I need toothpaste. Where do I go?"

"I need a hammer. Where do I go?"

(In these examples, often ask "why is the hammer there? the toothpaste?")

Ask your child to name things, and you supply the answer, explaining why the item would be found there.

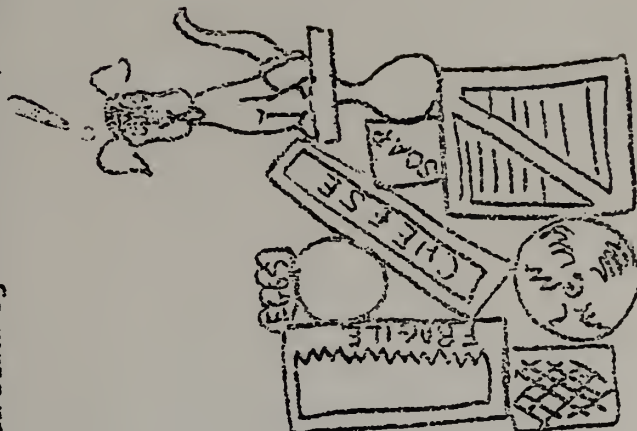
When you put away the groceries

ask your child to help you put away the groceries. describe why you have grouped or sorted the foods the way that they are arranged in the refrigerator or on the cabinet shelves; also ask:

"Why do I have these boxes on this shelf?"

"Can you think of another way we could sort the food?"

(In this process, you may discover that there has been no systematic way of storing your food items; that they have been put away at random; in this case or in a rearrangement, let your child help decide the basis for grouping. This is good experience that can extend to other common areas in the household, e.i., where and how toys are stored, cleaning materials, books, magazines, knick-knacks, plants, etc.)



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12. Evaluation of the preceding activity. Answer these questions:

1. Evaluate one of the preceding activities. Answer these questions:
1. What did your child learn?
2. What did you learn?
3. What questions did you use and how did they help your child?
4. What problem(s) did your child solve?

Describe an activity you created for you and your child during this week of the use of the curriculum guide. Include the problem that was solved and the questions you asked.



Some more Classification

Give your child objects that differ only in two or more attributes within one obvious dimension, such as different objects of different colors or objects of different sizes.

"How can you sort these objects?"

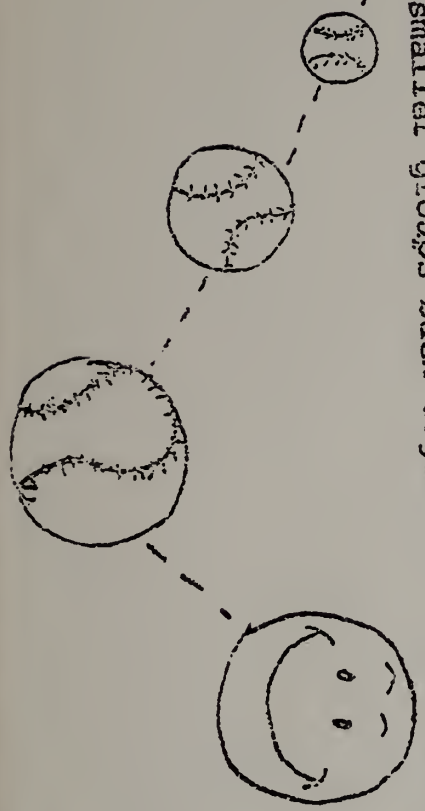
(Child may sort into groups not based on color or texture, but may form groupings on the basis of a new criterion; in this case, the child is not wrong, for there are many ways to classify or group objects. Ask your child 'why' he/she grouped in that way.)

Vary this activity by introducing containers that the child can place the objects in. e.g., if you gave your child rubber, wood, plastic and metal things, you may have a rubber container, a wood container, etc. Your child may put all things that are rubber into the boot, all things that are plastic into plastic bottles, and all that are metal into the pan; however, they may not be used this way and your child may think of another relationship; if so, ask him/her "Why?" he/she put the particular objects in that container.

Encourage your child to look at a major group and ask,

"Can you take these objects (e.g., rubber balls) and put them into different groups?"

Your child may proceed to solve the problem and sub-group by color, or size; e.g., small ball or big balls; or by use of balls: e.g., "I use these outside, and these are balls I use in the house; or by size; e.g., "These balls are old ones, and these are more new balls." Whatever criterion is used, have your child explain why he/she did it that way and after the group has been broken down into smaller groups, ask: "Can you put all these smaller groups back together?" "How are they all the same?"



from the book in the Appendix. Materials: picture magazines, old books and coloring books, scissors

you and your child cut out and save a variety of animal pictures; look for different kinds of pictures (photographs, drawings, cartoons, silhouettes--black and white as well as full-color)

The pictures can be sorted by you and your child in many ways: into piles of different animals, into categories of animals that have four legs and those that don't, into groups that fly and those that can't fly. Ask:

"What are some other ways that we can sort these pictures?"

After some assortment has been made, ask:

"Why can we put some of these groups back into a larger group; what is the same among these (number of) groups?" (For example: your child may have grouped birds into one group, dogs into another, cats in another, etc.; when asked if some of these groups can be put into a larger group, he may join together animals that live on land in one group and in another animals that we don't see very often, those that live in water in another, and into another animals that are common; if your child cannot think of an attribute or characteristic that would relate groups, help by suggesting one or two ways.)

A nice extension of this classification with pictures is to go outdoors and collect or observe a variety of things that grow; and see how your child might classify them.

Remember, you and your child are thinking of how things are similar and how they are different and just as important what you and your child can do to make some things the same or similar and/or different, i.e., understanding what or how things change, knowing how things relate and how, with some change, they can relate as problem-solving.



the process of ordering involves discovering and understanding that things can be placed in a series according to a pattern that goes from the least to the most and most to the least. Many logical and mathematical operations are based on this understanding, such as placing blocks next to each other to form a staircase and counting from 1 to 10. However, you can use opportunity, create and play some ordering games with your child. For example:

"Can you order the measuring cups from smallest to biggest?"

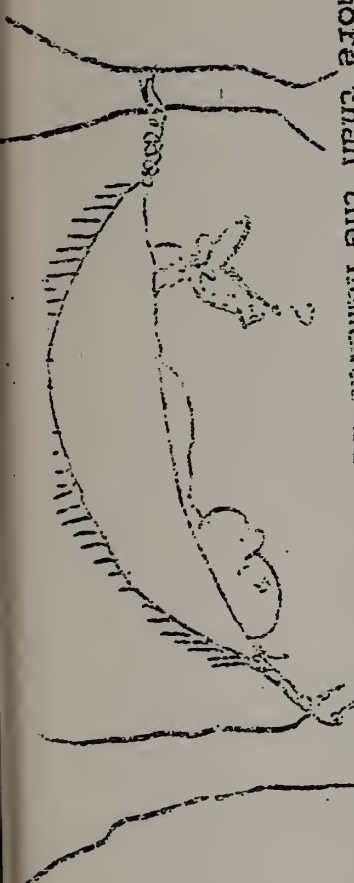
"Can you order these blocks from shortest to tallest to make a staircase?"

"Can you draw your family in a row?"

"Can you order these glasses from most to least full?"

When you and your child order, you have to think about the thing that goes before and that which follows. For example in ordering the measuring cups, the second one in the series is determined by observing that it is of a certain amount bigger than the first and by the amount, that much smaller than the one that will follow it in the series. Your child has to discover the relationship that exists between the series of measuring cups. His/her determination of the amount that each cup differs from the other will be a quality judgment, i.e., he/she won't. In most cases, determine the exact amount of difference, but will know that there is some difference.

A good activity is to use the number system with your child after he/she has had several opportunities for ordering real objects. With the numbers 1 through 10, either written on cards or separate pieces of paper, ask: "Can you arrange these numbers in order?" "Why do they go in that order?" (Ensure that your child is able to explain why he has arranged them in a particular series, so that he/she observes that each number in the series differs by a certain amount from the number before and after. In the case of ordering from 1 through 10, your child would have to explain that each number is 1 more than the numeral before and 1 less than the numeral after, etc.





proceed to do this with other large groups, emphasizing the 'why' child grouped this way, 'how' or 'what' other groups could be formed, 'how' they are different, 'why' the sub-groups can go back together to form a larger group.

The act of classifying can be done by you and your child many times during the day; but it is important to create new situations for your child and to focus on common, daily activities for increasing your child's problem-solving skills around classification tasks.

Remember these questions:

"Why did you classify the objects this way?"

"What other way could you do it?"

"Why can you put them together?" (Be sure to have child confronted by grouping that can't be put back to one single group that he/she started with; e.g., making whole carrots into sliced carrots - diced carrots - parred carrots - chopped carrots. Ask how these different groups are the same. How they are different, and why after making them, they cannot go back to whole carrots.

Remember to model classifying behavior yourself, verbally describing your actions; e.g., when you put groceries away, describe why you put certain objects in certain areas.

Or when you put clothes away, describe why they do into different groupings into different places; or describe why kitchen dishes and utensils are placed where they are; what function these groupings serve and ask your child if a different grouping could be made.

As you begin to discover why certain objects, functions, and events are the same, and why and how they are different, and what attributes of an object stay the same across change and what action is necessary to make something the same, equal, or different, verbally describe these discoveries for your child using the objects for concreteness.



Sequencing - Another way to order or relate things - For example:  
 pictures tell stories when they are put in order.

Materials: Old comic books, or any other old newspaper or magazine cuttings, and heavy paper or cardboard.

Comic books are a good source of picture sequences that you and your child can arrange in sequence. Pictures can be arranged in different sequences to tell different stories. After pictures are cut out, finding a series of pictures that work together is a problem. Your child will again have practice in thinking about alternative ideas, i.e., which picture is most related to the one before and which can be used after. He/she will be thinking about cause and effect relationships, and at the same time your child will be trying to keep in mind the position and viewpoint of whomever will read the story, as well as what he/she wants to express.

#### Activity:

Place a sequence of pictures on the table or on the floor--not in any order, ask: "Can you use these pictures to tell a story?"

"Try to think how each picture is related to the one you put before and the one you put after."

Be sure to accept any picture sequences that your child can logically explain. Then say:

"Will you tell me the story."

Now, it is your turn to choose a series of pictures that tell a story! While you are selecting, verbally describe the reason for your selection so that your child will hear how you have related the different pictures."

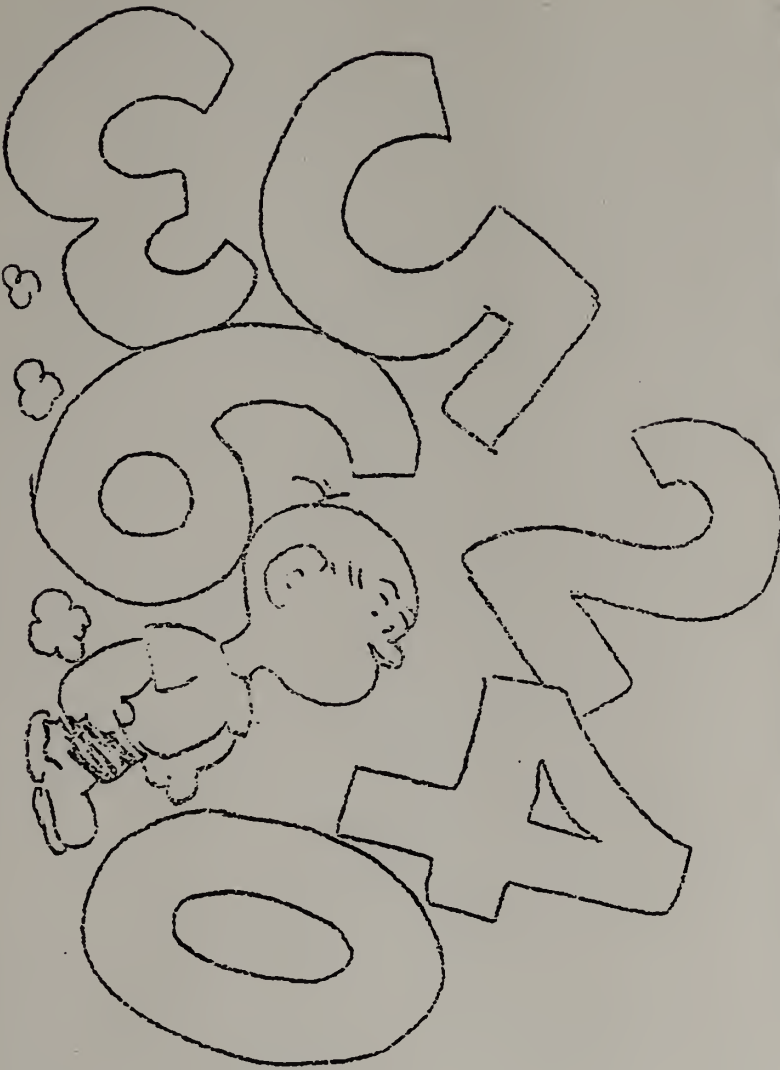
Sometimes when you do this activity, create a surprise ending for your story; one that is not easily predictable. But still can be possible based on the pictures and before. This will help your child to see the extent of possible alternatives at the same time, he/she will feel the pleasure in seeing and hearing a surprise ending.

#### Variation:

Another nice activity for putting things into relationship is to have available a roll of shelf paper (or tape pieces of paper together to make a strip) and ask: "Can you tell a story on this strip of paper by drawing things that are related?"



By playing with the number system many times, your child will discover the many relationships on the basis of quantity. He/she will see that 3 is 2 more than 1 but two less than 5; that 4 is one more than 3 but 2 less than 6; and soon to develop is an awareness that to increase 5 to 7, 2 must be added and that to decrease 8 to 5, 3 must be taken away. Your child will discover that the numbers can be ordered by differences of 2, that is the numbers 2,4,6,8,10 can be arranged in a series; or the numbers can be arranged by differences of 3, that is the numbers 1,3,6, and 9 forms a series. All of these discoveries are essential for working with the distributive and associative properties of the number system.



PARENT'S COMMENTS

1. Evaluate one of the preceding activities. Answers these questions:
1. What did your child learn?
  2. What did you learn?
  3. What questions did you use and how did they help your child?
  4. What problem(s) did your child solve?

1. Time parent spent observing objx and objects before manipulating them. \_\_\_\_\_
2. Time child spent observing box and objects before manipulating them. \_\_\_\_\_

Yes

No

3. Parent asked child what objects would fit into the 3 slots cut from box. - - - - -
4. Child asked parent what objects would fit into the 3 slots cut from box. - - - - -
5. Parent told child what objects would fit and what objects would not fit. - - - - -
6. Parent attempted to fix the objects into the box. - - - - -
7. Child attempted to fit the objects into the box without help from parent. - - - - -
8. Child asked parent to put the objects into the box. - - - - -
9. Parent asked what would happen if the boat were turned to a different position. - - - - -
10. Parent told child to turn the boat to different positions in order to fit the boat into the differant slots. - - - - -
11. Parent did not observe the relationship between the slots cut from box and the different positions of the boat. - - - - -
12. Parent verbally described what he/she was doing while attempting to fit the objects into the box. - - - - -
13. Child verbally described what he/she was doing while attempting to fit the objects into the box. - - - - -



## SIGHTS AND SOUNDS

1. Time parent spent observing materials before verbally responding or manipulating materials. \_\_\_\_\_
  2. Time child spent observing materials before verbally responding or manipulating materials. \_\_\_\_\_
- |  | <u>Yes</u> | <u>No</u> |
|--|------------|-----------|
| 3. Parent asked child what was the same and/or different about the activity (or materials). - - - - -  | -          | -         |
| 4. Child asked parent what the different materials were for. - - - - -   | -          | -         |
| 5. Child asked parent to help place the different materials into the sacks. - - - - -  | -          | -         |
| 6. Child attempted to sort and place the objects into the different sacks without seeking help from parent. - - - - -                                      | -          | -         |
| 7. Parent asked child why these were the different objects with the sacks. - - - - -   | -          | -         |
| 8. Parent asked child what he/she or they were to do with the objects. - - - - -   | -          | -         |
| 9. Parent sorted objects and placed them into the different sacks. - - - - -   | -          | -         |
| 10. Parent verbally described what he/she was doing while sorting out and placing in objects. - - - - -  | -          | -         |
| 11. Parent asked child how he/she would know which objects went into which sacks. - - - - -  | -          | -         |
| 12. Parent asked child what was happening or shown in the different pictures. - - - - -  | -          | -         |
| 13. Parent asked child what function some of the objects served. - - - - -   | -          | -         |
| 14. Parent told child what pictures went into the different sacks. - - - - -   | -          | -         |
| 15. Parent told child what objects went into the different sacks. - - - - -  | -          | -         |
| 16. Parent was aware that the objects were placed into the different letter bags on the basis of their function (scissors - cut; brush - paint). - - - - - | -          | -         |
| 17. Parent was aware that the pictures were placed into the different bags on the basis of what the things pictured were doing. - - - - -                  | -          | -         |

1. Amount of time parent spent observing objects in sand table before verbally responding or manipulating objects. \_\_\_\_\_

2. Amount of time child spent observing objects in sand table before verbally responding or manipulating objects. \_\_\_\_\_

YesNo

3. Parent manipulated and played with materials in sand table. - - - - -

4. Child played with materials in sand table. - - - - -

5. Parent verbally described what he/she was doing while playing with materials. - - - - -

6. Child verbally described what he/she was doing while playing with objects in sand table. - - - - -

7. Child noticed (by looking or verbally announcing) that cones were different in length. - - - - -

8. Child asked parent why cones were different. - - - - -

9. Child observed that sand came out at different rates from the cones (verbally described action or looked intently at action of sand; repeated action of filling cones and observing the sand coming out.) - - - - -

10. Child asked parent why sand came out at different rates and speeds, or "differently". - - - - -

11. Parent told child that cones were different sizes (either by length, size of end or hole). - - - - -

12. Parent told child which tips fit the different containers. - - - - -

13. Child asked parent to screw the tips on the containers. - - - - -

14. Parent attempted to screw the tips on the different containers. - - - - -

15. Parent asked child why some of the tips did not fit the containers. - - - - -

16. Parent asked child what would happen if the funnel were used for filling containers with sand. - - - - -

17. Child attempted to fill the containers with, and using only, the scoops. - - - - -

18. Child asked parent to help fill the containers with sand. - - - - -

19. Parent filled the containers with sand using only the scoop. - - - - -

20. Parent filled the containers with sand using the funnel and scoop. - - - - -

1. Time parent spent observing obj and objects before manipulating them. \_\_\_\_\_
2. Time child spent observing box and objects before manipulating them. \_\_\_\_\_

Yes

No

3. Parent asked child what objects would fit into the 3 slots cut from box. - - - - -
4. Child asked parent what objects would fit into the 3 slots cut from box. - - - - -
5. Parent told child what objects would fit and what objects would not fit. - - - - -
6. Parent attempted to fix the objects into the box. - - - - -
7. Child attempted to fit the objects into the box without help from parent. - - - - -
8. Child asked parent to put the objects into the box. - - - - -
9. Parent asked what would happen if the boat were turned to a different position. - - - - -
10. Parent told child to turn the boat to different positions in order to fit the boat into the different slots. - - - - -
11. Parent did not observe the relationship between the slots cut from box and the different positions of the boat. - - - - -
12. Parent verbally described what he/she was doing while attempting to fit the objects into the box. - - - - -
13. Child verbally described what he/she was doing while attempting to fit the objects into the box. - - - - -



ART TABLE

- 1. Time parent spent observing materials on table before verbally responding or manipulating materials. \_\_\_\_\_
- 2. Time child spent observing materials on table before verbally responding or manipulating materials. \_\_\_\_\_

Yes

No

- 3. Parent asked child what was the same and/or different about the activity (or materials). - - - - -
- 4. Child asked parent what the different materials were for. - - - - -
- 5. Child asked parent to use the different materials. - - - - -
- 6. Child used some of the materials in combination with the coloring book without suggestions or help from parent. - - - - -
- 7. Parent told child that the different materials were to be used with the coloring book. - - - - -
- 8. Parent told child what to make with the different materials. - - - - -
- 9. Parent told child how to use the different materials. - - - - -
- 10. Parent asked child how the different materials could be used. - - - - -
- 11. Parent used the materials in combination with the coloring book. - - - - -
- 12. Parent verbally described what he/she was doing while working with the materials. - - - - -
- 13. Child verbally described what he/she was doing while working with the materials. - - - - -



Name

## WATER TABLE

YesNo

Amount of time parent observed materials in water table before responding to child or playing with objects. \_\_\_\_\_

Amount of time child observed materials in water table before responding to parent or playing with objects. \_\_\_\_\_

Parent played with objects in water table. - - - - -

Child played with objects in water table. - - - - -

Parent verbally described what he/she was doing while playing with objects. - - - - -

Child verbally described what he/she was doing while playing with objects. - - - - -

Parent asked questions that required the child to do something with objects in water table. - - - - -

Child discovered leak in pouring cup. - - - - -

Parent told child why cup was leaking. - - - - -

Child asked parent why cup was leaking. - - - - -

Child manipulated cup to find source of leak. - - - - -

Parent manipulated cup to find source of leak. - - - - -

Parent asked child why cup was leaking. - - - - -

Child asked parent why the one cap would not fit the container. - - - - -

Parent tried to screw the cap on the container. - - - - -

Child tried to screw both caps on the two containers. - - - - -

Parent told child why cap would not fit. - - - - -

Parent asked child why cap would not fit. - - - - -

Parent suggested to child to try cap on the two containers. - - - - -

Child attempted to screw cap on the two bottles on table near water table without asking parent for help. - - - - -

Child used water cup with tubes and cups. (Without parent prompting.)

Parent told child how to use the pump and tubes and/or cups. - - - - -

Parent asked child how pump could be used. - - - - -

Parent showed child how pump could be used. - - - - -

- |   | <u>Yes</u> | <u>No</u> |
|---|------------|-----------|
| Child asked parent to fix the tube that was stuffed. - - -                            |            |           |
| Parent tried to remove the paper inside the tube. - - -                               |            |           |
| Parent asked child why the water did not go through the tubes that was stuffed. - - - |            |           |
| Parent told child why the water would not go through the tube. -                      |            |           |

## BALLOONS

1. Time parent spent observing materials before verbally responding or manipulating materials. \_\_\_\_\_
2. Time child spent observing materials before verbally responding or manipulating materials. \_\_\_\_\_

YesNo

3. Parent asked child what was the same and/or different about the materials (or activity). - - - - -
4. Child asked parent what the balloons were for. - - - - -
5. Child asked parent what the materials (string, glue, yarn) were for.
6. Child asked parent to make a face on the balloon. - - - - -
7. Child asked parent to find another piece of string for the balloon.
8. Child asked parent to glue yarn on the balloons. - - - - -
9. Parent asked child what he/she could do with the balloons and materials. - - - - -
10. Parent asked child why there were materials (yarn, string, glue, felt pieces) with the balloons. - - - - -
11. Child observed that the three balloons were different sizes (by verbal description or action indicating measuring). - - - - -
12. Parent told child that balloons were different sizes and the big ones were for big people (e.g., parent, teacher) and small ones for child. - - - - -
13. Parent asked child what would happen if he/she pasted buttons and/or glue on the balloons. - - - - -
14. Parent used materials and constructed something new. - - - - -
15. Child used materials and constructed something new without help or suggestions from parent. - - - - -
16. Parent verbally described what he/she was doing while working with the materials. - - - - -
17. Child verbally described what he/she was doing while working with the materials. - - - - -
18. Parent told child what to do with the balloons and different materials. - - - - -
19. Parent told child how to use the materials. - - - - -
20. Child obtained an additional piece of string for the third balloon without help from the parent. - - - - -

## BALLOONS Cont'd.

YesNo

1. Parent told child who to obtain another piece of string for the third balloon. - - - - -
2. Parent helped child make something new from his/her balloon. -



## BLOCK AREA

1. Amount of time parent observed materials in area \_\_\_\_\_.
2. Amount of time child observed materials in area \_\_\_\_\_.
- |   | <u>Yes</u> | <u>No</u> |
|---|------------|-----------|
| 3. Parent asked "what if" questions that required the child to do something with the objects. - - - - -       | -          | -         |
| 4. Parent verbally referred to numbers on wall. - - - - -   | -          | -         |
| 5. Child verbally referred to numbers on wall. - - - - -  | -          | -         |
| 6. Parents verbally suggested a relationship between numbers on walls and blocks. - - - - -                   | -          | -         |
| 7. Child verbally suggested a relationship between numbers on wall and blocks. - - - - -                      | -          | -         |
| 8. Parents placed blocks under number cards on wall. - - - - -  | -          | -         |
| 9. Child placed blocks under numbers cards on wall. - - - - -   | -          | -         |
| 10. Parent played with car in block area. - - - - -   | -          | -         |
| 11. Child played with car in block area. - - - - -  | -          | -         |
| 12. Child asked parent why the box of wheels was there; or what the wheels were for. - - - - -                | -          | -         |
| 13. Parent told child how to fix the truck. - - - - -   | -          | -         |
| 14. Parent showed child how to fix the truck. - - - - -   | -          | -         |
| 15. Parent played with truck without fixing the wheels. - - - - -   | -          | -         |
| 16. Child played with truck in block area without fixing the wheels. - - - - -                                | -          | -         |
| 17. Parent attempted to fix the wheels on truck without involving the child. - - - - -                        | -          | -         |
| 18. While parent worked on truck, verbally described what he/she was doing. - - - - -                         | -          | -         |
| 19. Child attempted to fix the wheels on truck without involving parent (includes asking for help). - - - - - | -          | -         |
| 20. Child verbally described what he/she was doing while working on the truck. - - - - -                      | -          | -         |
| 21. Child asked parent to fix the truck. - - - - -  | -          | -         |
| 22. Parent asked "why" questions. - - - - -   | -          | -         |
| 23. Child verbally announced that different blocks were in the area. - - - - -                                | -          | -         |

## APPENDIX E

Mothers

| <u>Pre-Test</u><br>Number of Questions | <u>Post-Test</u><br>Number of Questions | <u>Amount of Change</u> |
|--|---|-------------------------|
| JE - 58                                | JE - 87                                 | JE - 20 +               |
| HO - 56                                | HO - 76                                 | HO - 27 +               |
| FO - 52                                | FO - 75                                 | FO - 15 +               |
| HA - 47                                | HA - 62                                 | HA - 42 +               |
| NE - 24                                | NE - 66                                 | NE - 29 +               |
| JO - 18                                | JO - 45                                 | JO - 23 +               |

Discussion

The rank ordering of mother's and children's scores showed that for four (4) mothers--JE, JO, FO, HO--their relative position stays the same on the pre and post testing. For two (2) mothers--HA and NE--they changed positions between the testing; however, the change was only between their two standings. Therefore, it can be assumed that both the Training Program and the effect of individual mothers may have influenced the increase in scores, for example, mothers that were predisposed to asking more questions before the training, asked more questions after the training, and those that asked less before the training, asked less after the training. However, the change score and the rank ordering show that the two (2) mothers who asked fewer questions relative to the whole group, actually had breater increases from the pre-testing, than the other mothers,

with Mother NE showing an increase of 42 questions compared to Mother JE who had 29 for an increase, but who was the top ranked mother in terms of number of questions asked. Mother JE increased 29 questions which was a greater increase than for three other mothers. Therefore, these change scores and ranks indicate that the Training Program was more effective than individual differences.

Pre-Training Parent/Child Problem-Solving Encounters, April 23, 1977

No. of Questions

Table 5

P=Parent C=Child

| Activities         | Jeffery |   | Hamilton |   | Ford |    | Nelson |   | Hodge |    | Johnson |   |
|--------------------|---------|---|----------|---|------|----|--------|---|-------|----|---------|---|
|                    | P       | C | P        | C | P    | C  | P      | C | P     | C  | P       | C |
| 1. Water Table     | 2       | 0 | 1        | 0 | 8    | 4  | 0      | 2 | 8     | 1  | 0       | 0 |
| 2. Art Table       | 16      | 1 | 17       | 0 | 17   | 0  | 8      | 1 | 10    | 3  | 1       | 0 |
| 3. Balloons        | 11      | 3 | 8        | 1 | 8    | 0  | 5      | 3 | 9     | 3  | 4       | 1 |
| 4. Blocks          | 13      | 0 | 11       | 0 | 5    | 0  | 4      | 2 | 12    | 4  | 3       | 1 |
| 5. Sand Table      | 6       | 0 | 8        | 0 | 7    | 3  | 2      | 0 | 7     | 3  | 5       | 1 |
| 6. Sacks & Letters | 10      | 0 | 2        | 0 | 7    | 5  | 5      | 0 | 10    | 3  | 5       | 0 |
|                    | 9.67    |   | 7.83     |   | 8.67 |    | 4.0    |   | 9.33  |    | 3.0     |   |
| Questions Total    | 58      | 4 | 47       | 1 | 52   | 12 | 24     | 8 | 56    | 17 | 18      | 3 |



Post/Test Parent/Child Problem Solving Encounters, August 23, 1977

Questions

Table 6

P=Parent C=Child

| Activities         | Jeffery |    | Hamilton |    | Ford |    | Nelson |    | Hodge |    | Johnson |    |
|--------------------|---------|----|----------|----|------|----|--------|----|-------|----|---------|----|
|                    | P       | C  | P        | C  | P    | C  | P      | C  | P     | C  | P       | C  |
| 1. Water Table     | 12      | 3  | 4        | 0  | 14   | 2  | 9      | 2  | 10    | 3  | 5       | 2  |
| 2. Art Table       | 18      | 3  | 16       | 4  | 17   | 3  | 21     | 1  | 12    | 5  | 12      | 1  |
| 3. Balloons        | 19      | 2  | 10       | 2  | 15   | 2  | 7      | 5  | 15    | 4  | 3       | 2  |
| 4. Blocks          | 16      | 4  | 14       | 3  | 9    | 7  | 10     | 5  | 18    | 4  | 6       | 3  |
| 5. Sand Table      | 7       | 0  | 12       | 3  | 7    | 0  | 11     | 1  | 9     | 3  | 8       | 3  |
| 6. Sacks & Letters | 15      | 3  | 6        | 5  | 13   | 8  | 8      | 3  | 12    | 5  | 11      | 5  |
| Total              | 87      | 15 | 62       | 20 | 75   | 22 | 66     | 17 | 76    | 24 | 45      | 16 |

This table shows actual number of questions asked by each mother and child while engaging in various problem solving encounters.

Pre-Training Parent/Child Problem Solving Encounters

Observation Time

Table 7

P=Parent C=Child

| Activities         | Jeffery   |           | Hamilton  |           | Ford     |           | Nelson    |           | Hodge     |           | Johnson   |           |
|--------------------|-----------|-----------|-----------|-----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                    | P         | C         | P         | C         | P        | C         | P         | C         | P         | C         | P         | C         |
| 1. Water Table     | 15<br>sec | 8<br>sec  | 0<br>sec  | 0<br>sec  | 0<br>sec | 0<br>sec  | 10<br>sec | 0<br>sec  | 0<br>sec  | 0<br>sec  | 0<br>sec  | 0<br>sec  |
| 2. Art Table       | 0<br>sec  | 0<br>sec  | 0<br>sec  | 0<br>sec  | 0<br>sec | 0<br>sec  | 15<br>sec | 15<br>sec | 0<br>sec  | 0<br>sec  | 12<br>sec | 12<br>sec |
| 3. Balloons        | 5<br>sec  | 0<br>sec  | 5<br>sec  | 15<br>sec | 5<br>sec | 7<br>sec  | 0<br>sec  | 0<br>sec  | 8<br>sec  | 17<br>sec | 0<br>sec  | 0<br>sec  |
| 4. Blocks          | 0<br>sec  | 0<br>sec  | 0<br>sec  | 0<br>sec  | 0<br>sec | 10<br>sec | 10<br>sec | 0<br>sec  | 10<br>sec | 0<br>sec  | 0<br>sec  | 0<br>sec  |
| 5. Sand Table      | 0<br>sec  | 0<br>sec  | 3<br>sec  | 0<br>sec  | 7<br>sec | 0<br>sec  | 0<br>sec  | 0<br>sec  | 5<br>sec  | 0<br>sec  | 5<br>sec  | 0<br>sec  |
| 6. Sacks & Letters | 10<br>sec | 12<br>sec | 15<br>sec | 15<br>sec | 3<br>sec | 17<br>sec | 10<br>sec | 5<br>sec  | 15<br>sec | 15<br>sec | 10<br>sec | 10<br>sec |
| Total              | 30        | 20        | 23        | 30        | 15       | 34        | 35        | 20        | 48        | 27        | 27        | 22        |

Post Training Parent/Child Problem Solving Encounter

Observation Time

Table 8

P=Parent C=Child

| Activities         | Jeffery |    | Hamilton |    | Ford |    | Nelson |    | Hodge |    | Johnson |    |
|--------------------|---------|----|----------|----|------|----|--------|----|-------|----|---------|----|
|                    | P       | C  | P        | C  | P    | C  | P      | C  | P     | C  | P       | C  |
| 1. Water Table     | 15      | 5  | 30       | 12 | 20   | 10 | 20     | 10 | 15    | 13 | 19      | 16 |
|                    | sec     |    |          |    |      |    |        |    |       |    | sec     |    |
| 2. Art Table       | 13      | 6  | 19       | 10 | 17   | 10 | 19     | 15 | 25    | 10 | 17      | 10 |
|                    |         |    |          |    |      |    |        |    | sec   |    | sec     |    |
| 3. Balloons        | 12      | 10 | 30       | 15 | 10   | 5  | 14     | 5  | 25    | 5  | 15      | 10 |
|                    |         |    |          |    |      |    |        |    | sec   |    | sec     |    |
| 4. Blocks          | 5       | 10 | 25       | 5  | 24   | 20 | 20     | 2  | 40    | 15 | 20      | 0  |
|                    |         |    |          |    |      |    |        |    | sec   |    | sec     |    |
| 5. Sand Table      | 15      | 5  | 30       | 10 | 22   | 12 | 15     | 7  | 20    | 10 | 15      | 15 |
|                    |         |    |          |    |      |    |        |    |       |    |         |    |
| 6. Sacks & Letters | 25      | 10 | 36       | 40 | 27   | 30 | 24     | 20 | 20    | 22 | 25      | 15 |
|                    |         |    |          |    |      |    |        |    |       |    |         |    |
| Total              | 85      | 46 | 170      | 82 | 120  | 87 | 112    | 59 | 145   | 75 | 111     | 66 |
|                    | 1.30    |    |          |    |      |    |        |    |       |    |         |    |

Total 743

x= 122.67 sec.

2.04 min

x 123.8

2.04 mins.





