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ABSTRACT

This publication describes the day care program (housed in trailer units) for infants and preschoolers that has been developed since 1966 at the Frank Porter Graham Child Development Center in Chapel Hill, North Carolina. The ideas and experiences discussed in the publication are intended to aid other persons presently conducting or planning similar day care programs. Aspects of the program discussed include: (1) the physical environment and equipment; (2) staff variety, staff/student ratios, and staff training and communication; (3) student selection and family-school interaction; (4) an eclectic approach to child development incorporating theories of Piaget, Skinner, and Montessori; (5) organizational features of day care (peer and age grouping, staff division and daily schedules); (6) general educational services (learning which is continuous); (7) development of a structured curriculum; and (8) health care (daily procedures and research activities). The appendix contains sample inservice training techniques for teaching small groups and sample lesson plans and activities. (SDH)

perspectives

FRANK PORTER GRAHAM CHILD DEVELOPMENT CENTER

CHILD CARE
A PROGRESS REPORT

perspectives

FRANK PORTER GRAHAM CHILD DEVELOPMENT CENTER

A PROGRESS REPORT ON CHILD CARE

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James J. Gallagher, Director
Frank Porter Graham Center

INTRODUCTION

The beginning of the day care program at FPG Center can be marked from a significant event over five years ago. In 1965 the University of North Carolina Child Development Research Institute became one of twelve national research centers focusing on problems of mental retardation and funded by the National Institute of Child Health and Human Development. The Frank Porter Graham Child Development Center is a part of that larger Institute. From its beginning, the Center, under the original directorship of Dr. Halbert Robinson, has endeavored to meet three challenges:

- *to discover what differences such programs would make in the long-range functioning of families and the development of children.*
- *to discover program elements which would create the optimum or best environment for infants and children*
- *to develop comprehensive services such as full day care, health care, and education programs which could be emulated at other locations*

These long-term goals were clearly stated but they had to be put into some form of operation. In the mid-1960's there were no explicit blueprints for providing optimum care for infants and young children. Preschool age children across the nation were rarely supervised or educated by people specifically trained in child development, and seldom spent a day which was planned around their special needs. Those people administering day care centers and nursery schools often proceeded on the assumption that optimum development occurs spontaneously in children, or that deficits can be remedied if a child is exposed to an environment where there are plenty of playthings and he is supervised by an adult who is "good" with children.

When the Frank Porter Graham Center opened a day care facility in September 1966, specialists there questioned the wisdom of the then existing laissez-faire approach to child development. They felt that preschool children could derive greater benefits if programs were developed and implemented to meet their specific needs.

Since 1966, Frank Porter Graham staff members have sought to develop effective programs which help create an *optimum environment* for children in day care. Not only child care, but education, development, and health care, with the attendant problems of planning, scheduling, curriculum development, staffing, and physical facilities, have been given much thought and effort. Specific elements of the program continue to be defined and better coordinated as we gain experience. The physical facilities, which were custom-designed, have been modified several times. The list of basic materials for the program has been altered. Ideas regarding staff have changed, as have conceptions of supervision and in-service training. Policies limiting the size of children's groups and the curricula for educational programs have been modified from time to time, just as efforts in health research have been expanded.

There has been progress at the Frank Porter Graham Center as we continue to strive to meet initial challenges. With our specialized staff and the experimental nature of our program, we hope to establish the best possible environment for the care of young children. In this booklet we share with you some of the experiences gained in our first five years of operation.

A publication such as this one, spanning five years of effort, frustrations and rewards in establishing a day care center, can hardly be the result of one author. Current staff members at Frank Porter Graham have given their time and energies to the sections which involve their areas of responsibility, plus critical review of the over all content.

Multiple authors, then, include Dr. Joseph J. Sparling, Dr. Frank A. Loda, Mrs. Marjorie G. Land, Dr. Thelma G. Thurstone, Mrs. Ann M. Pegram and Mrs. Barbara P. Semonche. Needed and valuable editorial assistance was rendered by Judith Hulka and Kathleen Perkerson.

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PHYSICAL FACILITIES:
A Place To Begin

During its first years, the Frank Porter Graham Center was located in "temporary" facilities which consisted of a complex of trailer units on property owned by the University of North Carolina. The location was convenient. Approximately six blocks from the main campus, the complex was easily reached by parents and was close to downtown Chapel Hill.

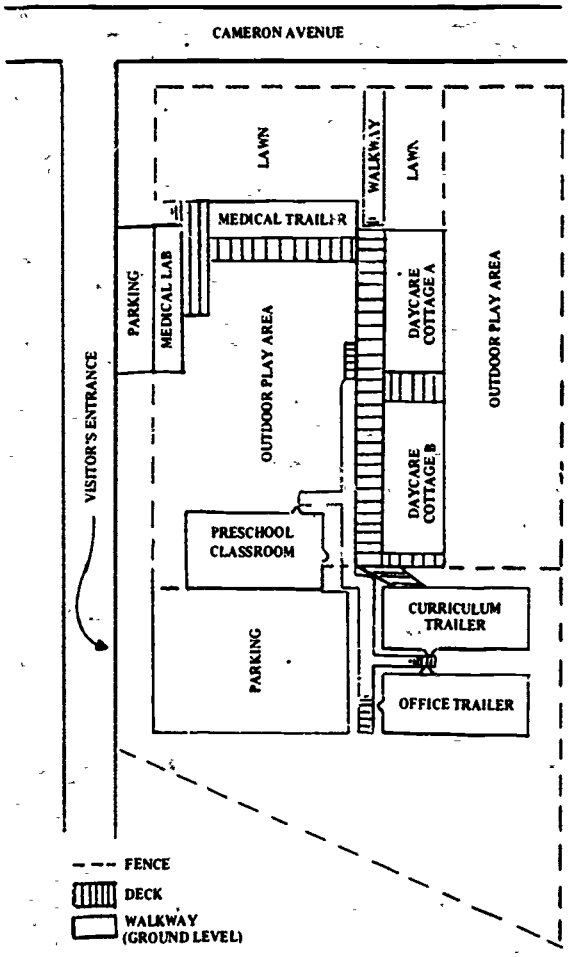
In September 1966, the original pilot Center consisted of three trailer units. Two of these were designed by the Center staff and provided space for basic day care and educational activities, plus a limited area for staff offices and meeting rooms. The units were partially remodeled twice as needs for space changed. The third trailer of the original group was part of the Infectious Disease Laboratory of the University of North Carolina Pediatrics Department. It included office space for the Center's pediatrician, a small medical examining room and a microbiology laboratory.

By 1970 our facilities had been increased to seven trailer units ranging in size from 12' x 30' to 30' x 48'. Additions to the original three buildings included a second specially designed caretaking unit, a large classroom with one-way observational areas, a unit for staff and work space, and a unit for a curriculum and materials laboratory. Within the fenced property there was ample and well-equipped play space. The seven units represented maximum growth possible at the site. A diagram of the area is shown here.

In our experience, the use of trailer units has been generally successful. Their cost is comparatively low and renovation can be made easily and cheaply. Units can be created in any shape desired since they are often manufactured and transported in sections. For example, we created one large classroom unit (size 30' x 48') by having four 12' x 30' units transported individually but installed side to side. The day care units or "cottages" were easily modified with partitions and built-in facilities when these were required.

A major drawback to the use of trailer units to house child development facilities is that special precautions must to taken to meet fire prevention standards. In states where day care is licensed, for example, it is important to

assure that proposed units meet fire department regulations. In any case, volatile materials should always be stored away from day care units, and areas around hot water heaters and furnaces should be carefully cleane It is sensible to periodically call in a fire department inspector to advise on afety precautions, evaluation procedures, and where to place fire extinguishers. Heating and cooling systems in thinly insulated trailers may be inadequate in some locations. An additional consideration is air-conditioning. On a trailer site standard air-conditioning may not be sufficient to maintain comfortable temperatures.



Physical facilities will vary greatly from one day care center to another and seldom be absolutely ideal. More important than having an elaborate facility is how well you use what you have.

CREATE A GOOD ENVIRONMENT

The cottage environment at the Frank Porter Graham Center is regulated to provide for physical protection and comfort. Some conditions we think are important to achieving such an environment are listed below.

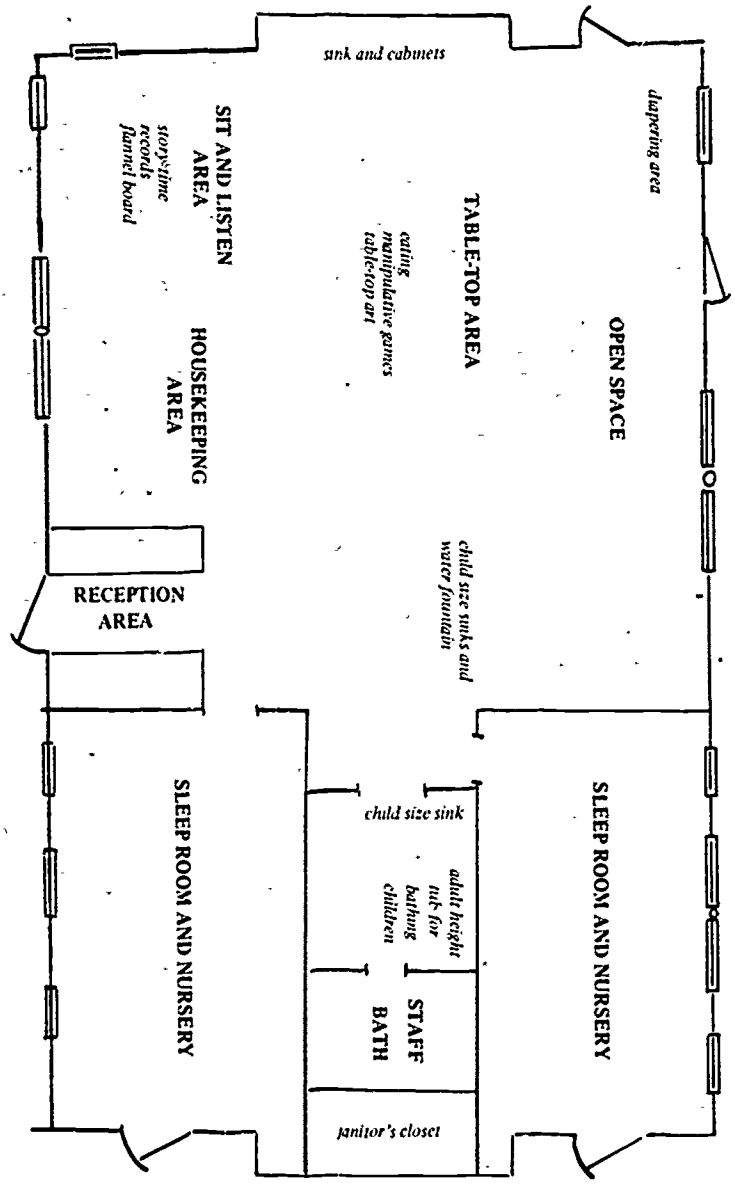
Temperature and Humidity: Room temperature is maintained at 68°-70°F in winter and 72-76° in summer. The trailer units have central air-conditioning with a preferred humidity range of 40-60%. If the air becomes too dry, especially in winter, the cold-stream vaporizer and humidifiers are kept running.

Quiet: Sleep rooms at the Center have curtains to block out light. Furniture is arranged to allow as much physical separation of cribs and cots as possible. To accomplish this, cots are lined up lengthwise along a wall with chests of drawers between them or in assymetric arrangements to avoid "rows." Sleep rooms are small with, ideally, no more than four to a room. We found it beneficial to put infants and toddlers in separate rooms.

Safety: Adult supervision is provided at all times at the Center. An adult is actually in the room with children or observing them through an interior window. Rooms and furnishings were planned to eliminate sharp corners, easily detached handles, and unprotected electric sockets which infants and toddlers can reach. All loose equipment and supplies are kept inside cupboards or above "reach level." There are safety catches or latches on all room doors, gates, and cupboards except those designated for "free exploration." We keep all drugs and medicines in locked cupboards at a height reachable only by adults.

Comfort Stimulation: There are a variety of pictures and posters on the walls at Frank Porter Graham. To create an interesting environment for children, colorful curtains and furniture covered with nontoxic paint are used. There are mobiles and other eye-catching materials hung above "reach level." Floors in sleep areas are covered with washable short pile carpets.

Traffic Control: The infant sleeping room is "off-limits" to all visitors, older children, and volunteers or staff members not immediately concerned with direct care or research involving infants.



FLOOR PLAN OF COTTAGE TRAILER

Environmental needs will vary from location to location, but the environment of any day care program will rarely be so perfect that it cannot be improved upon.

CHOOSE APPROPRIATE EQUIPMENT

A healthy environment is supplemented by equipment appropriate to children's ages and maturation levels. These needs must be considered in the financing of a beginning day care center. A sample list of furnishings and equipment considered appropriate for a cottage unit of 12-15 children ranging from early infancy to age five includes:

FURNITURE

2 porta-cribs
4 to 5 ¾-size infant cribs (4 is *minimum*)
4 cupboards for infant's personal belongings
15 to 20 locker cupboards (wall)
15 to 20 lockers of coat hooks at child level
12 child-size cots
3 feeding tables for older infants and toddlers
3 baby carriers
1 jump seat
4 jump swings for indoor or porch use
1 car seat
1 playpen
1 twin baby carriage
1 baby stroller
2 adult rocking chairs
1 child-size rocker
1 full-length door mirror
3 to 5 child-size tables (2 for meals)
12 child-size wooden chairs
1 book rack
2 to 4 open book-toy shelves
2 potty-chairs
2 step-stools for large commodes
1 changing table at adult comfort height (we use a porta-crib with mattress set at highest level)

CARETAKING EQUIPMENT

4 covered containers for pacifiers, spoons, thermometers (2 "dirty," 2 clean)
1 dozen bulb syringes
1/2 dozen Fahrenheit thermometers with rectal bulbs
First Aid Kit with extra bandages
1 swing-top plastic trash receptacle
2 receptacles for dirty linen (indoors)
2 receptacles for soiled diapers (outdoors)

3 twenty gallon trash receptacles (outdoor diaper and linen pickup cans)
4 open waste cans (standard office size)
1 swing-top waste can (large plastic)
4 linen and diaper hampers
1 thirty gallon trash receptacle

LINENS AND CLOTHING

4 dozen cot-size sheets
2½ dozen crib-size blankets
} For older children's (toddlers and up) naps. Allows for daily changes and laundry.

36 dozen diapers per week from diaper service (24 dozen for infants, 12 dozen for older children)
7 dozen diapers belonging to the cottage unit (5 dozen allowed for infants, 2 dozen for older children)

CLOTHING IS OPTIONAL EXCEPT FOR A SMALL EMERGENCY SUPPLY

7 dozen plastic pants, assorted sized (4 dozen for infants, 3 for older children)
2 dozen terry cloth jump suits (assorted sizes)
2 dozen corduroy infant overalls (sizes 1 and 2 years)
2 dozen diaper shirts (assorted sizes)
2 dozen infant "T" shirts (sizes 1 and 2 years, both long and short sleeve)
3 dozen undershirts (assorted sizes)
2 dozen cotton coveralls (assorted sizes)
2 dozen cotton sunsuits (assorted sizes)
2 dozen bath towels
3 dozen washcloths
2 dozen fitted crib sheets
1½ dozen 18" x 18" quilted cotton pads
1½ dozen crib blankets
2 dozen aprons for bathing infants
2 dozen smocks for caretakers
2 dozen small terry cloth bibs for drooling

DISPOSABLE SUPPLIES

Chix disposable washcloths (¼ case per week)
paper tissues (amount depends upon respiratory disease incidence)
disposable Belleview towels (1 dozen pack per week)
disposable bath and tub mats (1 dozen per week)
disposable diapers (7 dozen per week if these completely replace cloth diapers)

FEEDING MATERIALS

For Infants
4 ounce paper cups, ¼ case per month

6 plastic infant cups with perforated lids or spouts
6 plastic feeding dishes
16 spoons, metal teaspoon or small feeding spoons (4 per child per day)
2 dozen plastic bibs
4 infant feeding dishes

For Older Children
5 ounce Dixie Cups, ¼ case per month
2 dozen adult-size plates (divided)
1 dozen cereal bowls
2 dozen cups
2 dozen salad-size forks
2 dozen teaspoons
1 dozen adult-size forks
10 serving dishes
6 pitchers, 1 and 2 quart size (plastic)
2 dozen juice-size plastic glasses (6 oz.)
1 dozen water-size glasses (8 oz.)
2 dozen plastic bibs for mealtime

TOYS AND EDUCATIONAL EQUIPMENT

4 busy boxes (for cribs and playpens)
8 mobiles (for cribs and playpens with variety allowing for changes each week)
hard rubber teething rings or bones
wooden rings and rattles
wire clowns and monkeys which can be fastened to cribs, playpens or strollers
musical toys of all kinds (music boxes, music balls, xylophones)
metal or plastic cups and spoons (at least 2 for each infant)
small blocks - 1 inch cubes (used in supervised play)
small rubber or non-shatterable plastic dolls, cars
push-pull toys
large and small cuddly toys, animals
balls
record player and varied record collection
filmstrips, projector and screen
pictures, colorful posters
2 dozen wooden puzzles (6 to 25 pieces)
1 set child-size stove, sink, refrigerator, cupboard
1 doll bed
1 doll stroller
1 ironing board
1 dozen assorted dolls (including rag dolls)
crayons, paste, paper, 6 pair blunt scissors
toy wheeled vehicles (assorted sizes and types, to push and ride on)
play kitchen utensils, dishes, etc. for housekeeping play

play iron
large wooden toy chest without lid
2 tricycles
2 scooters
outdoor play equipment (swings, gym set, trees to climb, "dress-up" clothing)

Inexpensive but attractive and useful toys can be made using wash cloths, fabric scraps, socks, oatmeal boxes, cans, stones, beans, spools, yarns, plastic milk cartons, etc. The pamphlet, "Intellectual Stimulation for Infants and Toddlers" by Gordon and Lally, College of Education, Gainsville, Florida is an inexpensive source for such projects. It contains directions for making many toys and suggestions for using them.

STAFF:

A Crucial Factor

Selecting a staff is the single *most significant thing* you will do in establishing a day care center. Regardless of how much money is available, how many children are enrolled, or whether there is favorable community backing, the kind of staff you choose can "make or break" your program. Therefore, one of Frank Porter Graham's most essential beginning tasks was to select a team of workers to provide day care and educational services. In our region of the United States there were few training programs to prepare individuals to be caretakers or educators of very young children. Because of this, our initial staff was recruited from a variety of educational and occupational backgrounds. The staff was integrated, composed of men as well as women. Determined to provide a staffing pattern which could be used elsewhere, we minimized requirements for formal education except in specifically professional roles. Even now some of our staff members do not have high school diplomas. These individuals do, however, have the ability to fulfill valuable roles in working with children. In our experience, formal education has not been the best yardstick by which to measure a person's competence with children.

One qualification we did look for in job applicants was past experience with children. Work in church schools or other day care centers, work as a nurse or nurse's aide with pediatric experience, volunteer work that involved child care, babysitting, or even care of one's own children filled that prerequisite. The job candidate's physical and mental health, dependability, and ability to interact in a positive way with children were considered. These qualifications can most often be determined from job references and a personal interview. We made a special effort to pay careful attention to personalities and attitudes. Each candidate for employment was asked to express his feelings about a number of child-adult and child-child situations ranging from children's basic needs to the use of physical punishment.

Once candidates were selected, they became part of a health, day care, or educational staff team. In terms of function, it was often difficult to separate these teams. If health and education are considered in their broadest terms, it is obvious that all staff members working with children in any capacity are concerned with integrating educational and health functions with caretaking. If they are not, it becomes very difficult to support comprehensive child development.

EMPLOY A VARIETY OF PEOPLE

It is important to determine what types of workers you will need to operate a day care center. At Frank Porter Graham, initial personnel included:

- *caretakers of children* (we call them cottage parents);
- *educators* (curriculum development specialists, preschool teachers, teacher's aides);
- *administrators* (director, assistant director);
- *clerical help* (receptionist, general secretary, file clerk);
- *health personnel* (registered nurse, licensed practical nurse, pediatrician);
- *admissions person;*
- *cooks* (food service);
- *janitor* (janitor service);
- *researchers.*

In many cases day care workers will perform more than one of the above functions. For example, in a small center the administrator may also serve as a caretaker, educator, handle admissions, and even most of the clerical work. At a minimum, every center needs to fill a leadership position, employ caretakers, provide means for food and janitor service, and designate someone responsible for the children's health.

CONSIDER A SUITABLE RATIO

Having a large staff is often considered a good situation. In child care, however, we found that too many adults can be as harmful to the success of a program as having too few people on the staff. It is important to establish a *suitable child-adult ratio.*

During the first two years of the Center's operation, the established ratio created an imbalance in various aspects of the program. We had employed many people in an attempt to diversify the staff. At the same time, the development of the total program proceeded slowly, thus creating a ratio of nearly one adult to every one child. Such a situation presented a twofold problem:

- Even the best-intentioned adults had a tendency to talk with each other more than they should have.

. Children tend to demand more attention when several adults are available at the loss of developing independence and self-help skills. Realizing that this problem existed helped us to correct it.

At Frank Porter Graham we employ an *arbitrary ratio* of one adult to every five children in a multiage group. That figure implies three full-time staff members for a cottage of 15 to 16 children. The ratio of five to one is not particularly meaningful, however, because adults often have to leave their cottage for training and consultation just as child numbers are reduced from time to time when children go elsewhere for special lessons. While it is not always possible to abide by a strict adult-child ratio, it is useful to have a rule-of-thumb figure that you feel comfortable with.

The Center chooses to avoid situations that leave only one adult to tend children, regardless of their number. In case of an accident wherein a particular child would require immediate and exclusive attention, the other children could not be guaranteed adequate supervision with only one adult on hand. We also find ourselves uncomfortable even at "peak" times, with more than four to five adults to a group of 15 children.

TRAINING THE TEAM

Any group of people who expect to work as a team, that is toward a mutual goal, needs training. Prior to the beginning of the Frank Porter Graham Day Care Program, we held weekly staff meetings and a series of formal in-service training sessions on child development, health problems, and infant care (see Appendix, page 50). After the Center opened, regular staff meetings continued, but in-service training programs were temporarily abandoned.

The staff meetings, scheduled at an hour when most of the children napped, served an important function. They provided a forum for discussion of the practical aspects of Center activities. Time was allotted at each meeting to talk about differences of opinion or explore areas where individual child care beliefs and practices varied from Center aims. During the first operational year such staff meetings were invaluable. The small, heterogeneous staff was able to outline areas which needed more intensive study and collaboration, and establish certain base line policies of adult-child interaction and Center-community relations.

As our staff grew in size and complexity, weekly meetings which everyone attended became impractical. There were major areas which needed closer attention than could be given them in one large meeting. Eventually, methods for staff development and interaction changed. Smaller groups evolved in which staff members working in closely related areas (health, education, curriculum development) met regularly to focus on common problems and needs.

During our third year, we developed a different structure for staff interaction. "Task forces" were charged with formalizing policy and practice in areas such as: Administrative Relationships, Admissions, Parent-Center Interaction, Infant Care Procedures, Program Evaluation, and Staff Development.

"Staffing," or small meetings to discuss individual children or families, was scheduled when necessary.

TALK OVER TROUBLES

There are many kinds of people on the staff at Frank Porter Graham, and the variety is intentional. Yet, when a Center is just beginning, there are no established modes of conduct for people from diverse backgrounds to follow. While staff members struggle to define their personal roles, misunderstandings and conflicts can arise relating to:

- *freedom to speak up at meetings* (those with less education may be hesitant);
- *dress and conduct* (standards are related to education and culture);
- *low awareness of cultural folkways, both black and white* (opinions differ on haircutting, especially for male infant, role orientation of male and female, meaning of food and feeding, being outdoors in cold weather, use of profane language);
- *discipline* (synonymous with orderly behavior rather than physical punishment) *vs. individual freedom of action;*
- *staff gossip* both inside and outside the office.

There are no easy solutions to many of these problems. Most important, perhaps, is recognizing that a problem exists. Talk over troubles and give staff members an opportunity to voice opinions about relevant issues. At Frank Porter Graham we have found that conflicts of interest or differences of opinion can often be resolved through compromise. An example from our experience involved mealtime discipline. Staff members had different opinions on whether or not children should:

- *sit quietly at the table with hands in lap;*
- *taste all food on their plates;*
- *say "please," "thank you" and "excuse me";*
- *serve each other and/or adults;*
- *talk with food in their mouths;*
- *play at the table.*

Administrators and others who did not have to eat regularly with the children or clean up after them had a liberal attitude towards such issues. Medical people and cottage parents staunchly defended their organized, disciplined stance in regard to children's eating habits. A general staff meeting was held to discuss mealtime policies, but no fruitful conclusions were reached. It was with the help of a special committee of individuals representing each group that we reached compromise. General lunchtime practices were established which all staff members agreed to abide by (see Appendix, page 51).

This is only *one* approach to minimizing conflict and misunderstanding among staff members. There are several others. In some instances, problems even work themselves out over time and desirable solutions become apparent.

COMMUNITY:

Who To Serve

A crucial decision which faces a day care center is who it should serve. Often the community it is located in covers a broad land area and includes families from different races and economic levels. Existing programs are sometimes slanted towards one population. Laboratory schools, for example, may enroll a majority of children from professional families, while Head Start and Title I Programs are usually geared to low income families.

The approach at Frank Porter Graham was to endeavor to serve the entire community regardless of race or *ability to pay.* We saw two advantages in this:

- *A child's experience and education can be enriched by his belonging to a heterogeneous group.*
- *A mixed population of children provides the opportunity for research needed to develop programs of wide application.*

As a result of this thinking, the population of children at the Frank Porter Graham Center was drawn from a representative cross section of the Chapel Hill community. We established only two qualifications for enrollment in the Center's program:

- *The children should be from families currently living in Chapel Hill who expect to remain indefinitely in the Chapel Hill-Carrboro School District.*
- *Mothers of children enrolled should be employed, in school, or otherwise out of the home most of the day.*

Our experimental design called for equal numbers of boys and girls of Negro and White parentage from all socioeconomic levels. In practice, we found such a balance often difficult to achieve. Frequently, it was possible only to

approximate this goal by drawing half the group from the less advantaged areas of the community.

We accepted our first group of infants from interviews in April-May 1966, while expectant mothers interested in our program attended private and staff prenatal clinics at North Carolina Memorial Hospital. Initial plans of the Center called for admission of infants only, but infants, in many cases, had older siblings who also needed care. In addition, we realized that admission of just one age group limited research opportunities. Considering these things, it was decided to simultaneously enroll a small group of two year old children. All youngsters of an eligible age within a family were taken into the Center's program.

Total enrollment at Frank Porter Graham during the first year was 13 children, six infants and seven two year olds. Increased staff and facilities swelled the 1970 figure to 40 children, including 18 preschoolers ages 30 months through five years, and 22 infants and toddlers ranging from six weeks through 30 months.

REMEMBER THE FAMILY

Screening families to decide which children to enroll is not the end of Center family interaction. It should be only the beginning. We view ongoing communications with families as a necessary part of our program. This interaction falls into three areas:

. *parent information*
. *parent education*
. *parent resources.*

Parent information refers to our efforts to tell parents what is happening at Frank Porter Graham. A parent information folder has been prepared to include a description of our operating and emergency procedures, policy on fees, daily schedules, medical and dental care program, list of staff, etc. This is distributed to new families as their children enroll, and to all families each September. Parents are also informed when new programs are instituted at the Center. Of course, medical and dental reports are made concerning their children, and any pertinent behavior, eating, or sleeping problems are openly discussed with parents.

Efforts to educate parents are indirect. While there is seldom disagreement between Center staff and parents concerning goals, there can be marked differences in *methods* to reach agreed upon goals. By educate, then, we mean to increase parent's awareness of *methods* which we think are beneficial to the child's development and, therefore, use at the Center. Home and Center methods of aiding child development may vary on issues from discipline to oral hygiene. We can only attempt to educate parents to alter or adapt child-rearing methods by letting them know what we are trying to accomplish–what we are doing rather than what they should do. They may choose, then, to reinforce Center efforts when children are at home. It is also necessary to tell parents about specific educational programs for children so that they will know what their youngsters are referring to when they talk about them.

Parent resources can be tapped occasionally. Not only can a Center get needed help or materials this way, but it serves the second purpose of interesting parents in Center activities. Sometimes parents aid us in planning classroom activities and field trips or providing transportation for such trips. Families contribute materials that can be used in the classroom, clothing their children have outgrown, grocery containers and such which make good playthings. Parents of our children generally provide refreshments for staff and parent meetings, too. One of the major regrets of the Center's first staff was their failure to involve parents even more actively in the total program. Parents have much to contribute to specific curriculum programs if they so desire, in addition to participating in ways mentioned above.

With these things in mind, we communicate with families by phone, by memo, through personal contact and the use of a parent's newsletter and bulletin board. Located in a highly visible place, the board provides new information daily to parents as they deliver and pick up their children. The newsletter is mailed on a biweekly basis.

Regardless of the methods of communication you select, Center-family interaction is important in maintaining the good rapport necessary for the success of your program.

CHILD DEVELOPMENT:
Our Particular Approach

The Frank Porter Graham Center takes an eclectic approach to child development By that we mean that the principles which underlie our educational program cannot be clearly identified with one particular philosophical or psychological camp. We draw from whatever theories, methods, and styles seem to be best for our purposes. In order to be clear and consistent in program design, in communicating our methods to other workers, and in in-service training, we do, however, employ three major theoretical frameworks. The first is grounded in the work of Jean Piaget; the second, in B.F. Skinner's operant model of learning which deals with reinforcement and scheduling; the third, that of Maria Montessori which stresses direct perceptual and sensory experience with the environment as a means of teaching the child about his world.

PHILOSOPHICAL GUIDELINES OF PIAGET

At the Center, we tentatively accept the intellectual development of the young child as explained by Piaget. According to him, children develop in defined stages: infants and toddlers proceed from period to period within the sensorimotor stage; preschoolers experience the preoperational stage; primary and early elementary school children exist within the stage of concrete operations, with the older and/or brighter elementary schoolers beginning to make the transition to the stage of formal operations.

We do at times depart from the Piaget model. For example, we at the Center feel it is possible for some children to proceed from one stage to another more rapidly than the model suggests, and that this is probably beneficial to the particular child's ultimate development. Despite departures from Piaget's basic tenets, Frank Porter Graham has found his model useful. It has aided us in designing programs; in understanding the processes by which children comprehend, explore, and manipulate their environment; and in arranging new tasks in a given area to "match" the child's next step in learning.

photo by Billy E. Barnes

SKINNER'S OPERANT MODEL

The operant model developed by B.F. Skinner has also proved to be a useful guide. Its emphasis in working with children is upon positive rather than negative reinforcement. We abide by it not only in structured learning situations, but also in all of the child's experiences at the Center. An aim in using the operant model is to move as rapidly as possible toward social modes of reinforcement. For example, when there is a discipline problem a child may be asked to leave the activity or learning situation he is involved in to sit in a special chair. This "time out," although not traditional punishment, lets him know that his behavior is unacceptable. Examples of positive reinforcement are reward techniques such as verbal praise or letting children who have worked on a project view their performance on videotape. Occasionally, we permit youngsters to take lesson materials home to show parents when they have performed well. A reward for a good showing might be to bring the accomplishment to the attention of the child's peers, and encourage them to clap for him. While rewarding one child, this method fosters a sense of good sportsmanship in the others.

Although there are no tangible rewards given at Frank Porter Graham, we use variations of the above techniques and constant verbal reinforcement or praise. By using positive rewards we have considerably lengthened the attention span of young infants and children beyond what is usually expected of their age group. The operant model has allowed us to measure response in children not only related to discrete, momentary behavior, but also related to whole systems of behavior. For example, by using Skinner's model in regard to the motivational system, we can attempt to identify achievement drive and feelings of competence then strive to encourage these qualities in children. In addition, the operant model has been a guide for program design and for training of operational and educational personnel.

THE MONTESSORI METHOD

These systems, that of Piaget concerning the development of the child, and that of Skinner concerning the regulation of reinforcement, are supplemented at the Center by special consideration of the child's environment. Each child is given many opportunities to discover, explore, manipulate and master his environment as stressed by Maria Montessori. The chance to touch, to sense, to smell, to experience texture and shading of sound are all a part of helping the child come to terms with, and feel comfortable with his environment.

Our children are supplied with a wide choice of toys, books, play equipment, and also take part in experiences outside the Center. We feel that a child's environment should be rich in novelty, variety, and be as inviting as possible while remaining orderly and understandable. On the other hand, we realize that even the most stimulating environment is of no special value unless a child is attentive to it. Therefore, a conscious aim of the Center's program is to enhance each child's curiosity, his attention, his alertness, and his constant scanning of what he sees, hears, feels, tastes, and smells.

DAY CARE:

Organizational Features

Day care of young children in a group setting tends to be identified with nursery school programs and, therefore, with care of children at least three years old. Although age three has traditionally been considered the youngest "appropriate" age for a child to be outside the home for a large part of the day, day care is becoming increasingly popular for even younger boys and girls. A very important focus of our program at Frank Porter Graham has been the development of sound guidelines for the care of infants and toddlers in a group setting.

FORM PEER OR MULTIAGE GROUPS

To begin with, we had to define what *type* of group setting we desired to establish. Considering this over time, we changed our concept of "group." When the Center began in 1966 with 13 children (infants to 30 months) there was no question as to what constituted a group. Therefore, we followed the nursery school model of same-age grouping. By the end of the first year, our original 13 children had grown to be toddlers and 3½ year olds. We then admitted more children from infancy to age 2½. With only two cottage trailers, infants and toddlers shared one unit while 2½ and 3½ year olds occupied the other.

As time passed and physical space became limited, we faced the problem of accomodating youngsters who represented a wide age spread, and, therefore, vast maturational differences. Although peer grouping had worked well during the first two years of the Center, when peer groups grew from two to five we did not have enough cottage units to separately house each group. We examined the alternatives. Should four and five year olds constitute a separate group? Could 2½ year old children adapt to the schedule of the infant-toddler group?

Although early circumstances led us to group together children of the same age, the original intention of the Center had been to employ multiage grouping. The decision to finally do so after two years of operation provided an alternative solution to our problem of limited physical space. In addition,

there were distinct advantages to multiage grouping. In a multiage group there was potential for more varied educational experiences through reciprocal learning. Older children learned more when they helped the younger ones. Younger children modeled after the older ones. Since multiage grouping is most like the situation in the home, that kind of Center arrangement provided continuity in the children's lives. It was not only more supportive of family life to keep siblings together, but was medically sound. Frank Porter Graham's medical staff found that multiage grouping reduced the incidence of serious respiratory disease. Since children are more susceptible to specific ailments during certain age periods, diversifying ages reduced the chances of one sick child spreading illness to all his peers. Multiage grouping facilitated communication between parents and staff. It became easier to exchange information when brothers and sisters were supervised by the same cottage parent. As a final consideration, multiage grouping was more economical than peer grouping in a small Center because it required fewer facilities and a smaller staff.

It was for these reasons, plus the appeal of a new approach to group child care, that Frank Porter Graham eliminated strict age grouping in 1968. Center groups are now more like a large family with children of different ages in the same cottage unit and cared for by the same cottage parents.

DEFINE AN OPERATIONS STAFF

Cottage parents, those directly responsible for the *basic care* of children in the family units, make up the Center's operations staff. They need to be kind, patient, able to set limits, flexible in their reaction to different child behavior, have obvious affection for children and a good personal self-image. In our case, their ages ranged from the early 20's to mid 40's. We have used even younger people during the summer and our experience with them has been good. In the winter, however, workers from that age group are unavailable except for part-time employment. Individuals employed as operations staff may have anywhere from two years of high school education to a college degree.

We found it important at Frank Porter Graham to employ a well-qualified graduate nurse with training and experience in pediatrics. To better provide for the physical and mental health of our children, the Center also employed two licensed practical nurses. These health oriented personnel, although listed with the operations staff, contributed a great deal to Center studies in health care, illness experience, and general group care of infants.

DIVIDE STAFF RESPONSIBILITY

The responsibilities of operations staff workers have been changed from time to time as the Center's program changes. When peer grouping was replaced in 1968 by the cottage plan or multiage grouping, the three cottage parents in each unit were given more defined responsibilities. One worker took responsibility for administration of the unit (administrative cottage parent), including care of supplies and equipment, needed repairs, and overall concern for interunit activities. Another endeavored to present defined curricula for the younger children (educational cottage parent) and, therefore,

worked closely with a curriculum development and research staff. The third became the medical cottage parent who screened children each morning for symptoms or signs of illness and carried out necessary plans for health care. These specific jobs were in addition to their original caretaker functions in the cottage. Because all three "parents" were concerned with all aspects of child care in their units, duties often and necessarily overlapped.

It is apparent at the Frank Porter Graham Center that an individual's training or experience need not dictate which responsibility he or she assumes. For example, some practical nurses might excel in coordinating educational activities, while others without formal training in health care could very well perform health screening chores. In assigning staff responsibilities for each unit, the director of the operations staff found that the personality and interest of each worker proved more decisive in the job he or she could best carry out than the type of training the person had.

ESTABLISH DAILY SCHEDULES

One of the most difficult undertakings for most day care centers is establishing a satisfactory daily schedule of activities. Whether to schedule eating, sleeping, and play when children demand these or to impose a regular schedule for such activities raises questions which inevitably lead to controversy. This kind of dilemma exists in the home, too, and is rarely resolved even by mothers caring for their own children. The problem is, of course, more complex in a group care situation. In some day care facilities strict schedules are adhered to. In others children are allowed to set their own schedules.

Day care workers at the Center maintained daily schedules and levels of adult-child interaction to suit various age groups. Infants have little "open" time per day and require constant attention. Toddlers are more mobile and expressive, but rarely develop sufficient self-help skills to be independent of sustained supervision. They need direct help in learning toileting, dressing, and playing with others. Two and three year olds are more independent of direct supervision. Because their needs are more uniform, they can better adapt to an eating and napping schedule. An older child, age four or five, may not require meals and naps at the same time as others in his peer group. The individual interests and abilities of four and five year olds should substantially influence the arrangement and management of their day.

At Frank Porter Graham we have tried several schedules in an effort to determine the one best suited to the physical needs and interests of the group, and flexible enough to consider the sometimes erratic needs of the individual child. For example, some youngsters outgrow their need for napping at age 2½, while other children require a lengthy afternoon rest when they are four years old. Individual needs can be determined by observing how often a child cries, how active he is, how much he eats and how long he pays attention. All such indices should be used in determining a child's schedule. Schedules established at day care centers should also allow for activities to exceed their allotted time if children seem interested in them, or be ended before "time's up" if they are not stimulating.

Adults, too, have to be considered when scheduling. A built-in obstacle to caring for very young children is that it "wears you out." Fatigue, resulting from long hours of continuous contact with youngsters and efforts to maintain a high level of adult-child interaction, can be a definite staff problem. During the second year at Frank Porter Graham, we began to schedule certain periods of the day for formal education. During these times, designated personnel replaced the operations staff. These "support" people allowed "operations" people time to relax, to plan and record, and to develop more consistent group approaches to the solution of problems. More recently, it has not been possible to provide these "support" people for the educational program and cottage parents have had to schedule breaks and planning time less frequently.

SAMPLE CLASSROOM SCHEDULE

7:45 to 8:30 – Assistant teacher is with children outdoors or in curriculum trailer.

8:00 Teacher is in classroom preparing for activities and snack.

8:30 to 9:15 – Teacher and assistant teacher are outside with children.

9:15 to 9:30 – Children snack outdoors or inside, depending on the weather.

9:30 to 9:40 – Children form a circle indoors for discussions, planning, sharing, etc.

9:40 to 10:40 – There is an activity period during which children choose an activity, teachers play games with individuals, or small groups of children work cooperatively or independently.

10:40 to 10:50 – Children and teachers clean up.

10:50 to 11:10 – Children are divided into two groups for quiet time and toilet. Children take turns to toilet while others look at books. When all have finished, children play show-n-tell or hear a story.

11:10 to 11:45 – Children play outdoors or there is indoor activity, games, or music.

11:40 Assistant teacher prepares the children who must catch a bus for home. They wash hands, get materials and are taken to the bus.

11:45 to 12:00 – The remainder of the group stays indoors for quiet activities and prepares to leave the Center for home.

SAMPLE DAILY SCHEDULE

7:45 to 8:00	Early arrivals – Milk			
8:00 to 8:30	Indoor play – Health checkups			
8:30 to 9:00	Infants inside – All other children outdoors	9:00		
9:00 to 9:30	Toddlers and younger 2's snack			Older 2's, 3's and 4's go to the classroom.
9:30 to 11:00	Education period in the cottages for infants, toddlers, and younger 2's			
11:00 to 11:30	Lunch for infants, toddlers, younger 2's			
11:30 to 12:00	Preparation for nap for infants, toddlers, and younger 2's	12:00		
12:00 to 12:30	Lunch for older 2's, 3's and 4's			
12:30 to 1:00	Nap preparation for older children			
1:00 to 2:00	Nap and rest for all children			
2:00 to 3:30	Optional nap or quiet play	2:30		2's, 3's and 4's go outside for planned activities.
3:30 to 4:00	Snack for all children			
4:00 to 4:30	Quiet play activities or outside	3:30		
4:30 to 5:15	Supervise quiet play activities Home preparation Children and staff clean-up			

EDUCATION:

A General Program

Educational services of the day care center are broken down into two areas: a *general* program which is designed by teachers and cottage parents to provide activities for very young children as part of their total Center experience; a *structured* program of educational inputs designed by curriculum specialists to achieve specific education goals.

General education refers to learning which is ongoing or continuous. Children learn from everyone and everything around them even when they are not being "taught". If one is aware of this potential, he can attempt to make childhood experiences meaningful and childhood environments stimulating. The general education program at Frank Porter Graham was a balanced one on the order of many laboratory nursery schools. Its primary focus was to provide an enriched environment which would stimulate growth and development of:

- *self-help skills*
- *verbal ability*
- *positive social adaptation*
- *realistic self-confidence.*

General education has been part of our plan throughout the Center's history.

In addition to providing for their basic physical needs, the day care staff was responsible for the Center's *general* education program for younger children. Because of their close interaction with the youngsters, the role was a "natural" for them. In the time allotted for free play, and with the support of this staff, there were opportunities for spontaneous learning, exploration and practice, as well as for social and emotional development.

We found it essential for staff workers to recognize the fact that education is a continuous process and that children learn from all those around them. Acting on this premise, our first staff members spent considerable time at conferences and at in-service training sessions designed to promote positive attitudes in them and effective skills for dealing with children. Partly as a result of these meetings, staff-children interaction at Frank Porter Graham was characterized by: warm acceptance of children; emphasis on reward

rather than punishment; existence of high but attainable standards; high level of social interaction among children; use of elaborated language based on explanations; and the encouragement of individual differences in children within widely but firmly structured limits.

We felt that creating an environment for spontaneous learning was important, but that it was not enough. At our Center a period of the morning was designated for scheduled educational activities. During these time periods general education occurred, but children were also given specific lessons by the curriculum development staff (see next Chapter).

During the periods allotted in the cottage for "educating" an infant, the baby was held, talked to, smiled at, cuddled, or placed in a new position or location so that he could experience his world from various perspectives. Under the direction of cottage parents, older infants and toddlers engaged in individual or group activities. Cottage parents were particularly sensitive to the need for all children to acquire self-help skills. Activities designed to help develop certain skills appropriate to age were:

- *for infants,* sensorimotor experiences emphasizing the sounds of music and the human voice, the sight of projected pictures and hanging mobiles, body movement, and the feel of a variety of tactile toys;
- *for children age one and two.* experiences emphasizing motor skills, the matching of similar objects, identification of body parts, listening to stories, work on increasingly difficult puzzles, identification by name of familiar objects, dressing and undressing themselves.

LEARN IN CLASS AND OUTDOORS

In July of 1968, the Center equipped a classroom trailer and hired a nursery school teacher and teacher's aide to provide a daily general education program within a classroom setting. From that time on, older children participated for at least three hours each morning in a classroom program which provided a balance of appropriate educational activities. This plan transferred the burden of educating older children from cottage parents to personnel specifically trained and employed for that job. Most children were 2½ years old when they were promoted to the classroom educational period. They left the cottage able to:

- verbalize their feelings and needs;
- dress and undress themselves except for shoe tying and manipulating difficult buttons;
- attentively participate in group activity.

From scheduled educational periods they learned to work puzzles of up to 20 pieces, identify the basic colors, tell short stories, and participate in matching games which varied in complexity.

In the classroom as in the cottage units, the Center's aim was to provide first hand experiences which permit the child to directly participate in the learning process. In order to create personal encounters with the world which were suited to the child's stage of development, classroom activities ran the gamut from nonstructured to structured, from individual to cooperative, from independent to teacher-directed.

The classroom itself was rich in opportunities for exploration, experimentation and innovation. It contained a number of "interest centers" or special areas designated for art, music, science, block play, puppet theatre, reading and housekeeping. The arrangement permitted children at the Center to pursue their own interests and inclinations. We held a circle discussion group each morning to call attention to these centers and encourage children to explore them. Through personal encounters with such new environments, youngsters at Frank Porter Graham sharpened their senses of taste, smell, hearing, seeing, and feeling. They increased their ability to question, plan, solve, listen, and explain.

The outdoor environment at the Center provided space, a sense of freedom, and challenging equipment to help promote motor development and coordination. Small group games which put a high premium on cooperation, sharing, and taking-turns aided social and emotional development in children.

In addition, we often used the resources of the larger community to provide learning experiences for the children at the Center. Field trips to such places as the supermarket or the bus station were planned as follow-ups to lessons presented in circle discussion groups. Such firsthand experiences did much to expand each child's concept of his world and to clarify misconceptions about it.

DIFFERENT WAYS TO LEARN

We consistently followed three approaches to learning—each one varying from the others in degree of structure. These were:

- *teacher-initiated experiences* which the teacher consciously planned in advance and introduced to her group;
- *child-initiated experiences* which developed from an individual child's response to objects or activities;
- *spontaneous experiences* in the environment on which the teacher capitalized.

General education in our preschool classroom was not characterized by sharp divisions of subject matter. Whether in free play or group discussion, all children were encouraged in both expressive and receptive language. Songs, stories, and dramatic play reinforced less direct language experiences. To help increase a child's vocabulary, there was the opportunity for the child to dictate stories to the teacher and hear tape recordings of his own voice. Because subjects were interrelated, general education was visualized as a circular pattern of subject areas organized around the needs of the young child.

CURRICULUM DEVELOPMENT:

A Structured Program

Integrating structured educational experience into the general day care program, particularly for infants and young preschool children, made the Frank Porter Graham Center almost unique in the mid-60's. This action reflects our belief that children will not necessarily produce their own "curricula" or select activities to help them acquire needed skills and correct deficiencies even in the most stimulating environment. For example, early in the program we observed that children with developmental lags in language did not spontaneously seek opportunities for verbal interaction with staff. Initially our program provided scant hope for correction of this language problem. Once structured experiences were begun, however, such children became involved in more verbal activities during free play periods. We observed subsequent improvement in their use of language.

CARRY ON RESEARCH

Many people think of research as occurring only in a laboratory. Actually, research requires careful observation and evaluation, and can be carried on wherever something is happening. With systematic records on each child, the directors of most day care programs can carry out a kind of "informal research" which will aid in program planning and evaluation. As we accept the concept of ourselves as fallible human beings, we can also accept the challenge that we need to be concerned about improving our program. It is through the collection of information and the honest evaluation of one's own effort that such an improvement can occur.

Ongoing research is essential to the development of new curricula. Since the Frank Porter Graham Center did not intend to select a list of already tested and established programs to use, its educational program had to be the product of research and innovative practice. Such a program usually evolves through a three stage process. First, staff decides on a specific educational goal and plans a structured program to achieve that goal. Secondly, the pro-

gram is created, tested and revised. Finally, if it has been successful, it is put into general practice.

The following is a rundown of our initial efforts to develop suitable curricula for a structured educational program at the Center. It is a very general example of ongoing research and practice which has been divided into three phases or levels of organization as we experienced them.

PHASE ONE: THE PILOT PROJECT

In the fall of 1967, six individuals were assembled to form an educational development team concerned with curriculum. Each was well versed in a particular content area, but few had extensive experience with infants or very young children. Since experience with children could be gained "on the job," expertise in content areas was a high priority in recruiting these new staff members.

After an initial month of planning, the curriculum development staff identified eight content areas to explore: language, perceptual skills (reading readiness), fine and gross motor skills, art, music, science, mathematical conceptualization, and second language (French). A pilot program was begun in which each staff member assumed responsibility for working with children at each age level in one or more of the eight content areas. Specific time periods were designated for educational activities conducted by these curriculum development specialists. Despite content differences, certain teaching goals were common to all of their structured programs. They should help children to:

- *improve verbal expression;*
- *lengthen attention span and become increasingly alert to the environment;*
- *establish positive and reasonable achievement goals.*

Three staff members developed their content areas (language, sensorimotor skills, and reading readiness) into more refined teaching programs in the spring of 1968. The other three curriculum staffers assumed roles as generalist teachers and participated with cottage parents in the delivery of ongoing basic educational activities.

During the time scheduled for general educational activities, the three specialist teachers had the opportunity to take small groups of children aside for individual instruction in specific skill areas. Such structured education complemented the general education program. Under this plan, it was not unusual for a child to interact with several teachers during the course of his day.

In addition to teaching small groups, the specialist teachers regularly supplied materials and lesson designs for the generalist teachers (see Appendix, page 53). The eventual aim was to shift the role of the specialist from daily classroom work to guidance and supervision of generalist teachers. This was accomplished as the program matured.

Portfolios which contained teaching scripts, verbatim response records of children, and newly produced audiovisual aids were compiled by curriculum development specialists for five teaching areas:

photo by Billy E. Barnes

. *sensorimotor development* (for infants through two year olds);

. *oral English* (for two through four year olds);

. *reading readiness* (for two through four year olds);

. *French* (for three and four year olds);

. *science* (for three and four year olds).

PHASE TWO: UTILIZING PROJECT RESULTS

Beginning in the fall of 1968, two key programs from phase one, Oral English and French, were selected to be continued for six more months. A third program, stimulation of primary mental abilities, was added to the curriculum. In contrast to the other two, the Primary Mental Abilities Program represented an established curriculum study which was highly developed and already experienced in other centers. It was the Science Research Associates' *Learning To Think* series—also known as the Red, Green and Blue Books by Dr. Thelma G. Thurstone. This particular program inclusion was an important factor in Frank Porter Graham's educational growth because it made available a sophisticated cognitive curriculum—a series of lessons, materials, and teaching devices to help preschool children learn (see Appendix, pages 54-56).

The object of cognitive curriculum is to improve upon the primary mental abilities of youngsters in areas such as motor coordination, perceptual accuracy and selectivity, receptive and expressive language, and reading. In other words, cognitive curriculum aims to prepare the child for doing things he will be asked to do on increasingly more difficult levels all his life.

In addition to the *Learning To Think* books, one lesson used at our Center to promote cognitive skills is centered around a mailboard figure of Katy—a kangaroo. Simple get-togethers with a teacher and Katy help children learn the concepts of shape, color, number, arrangement, and size. Some lessons involving the figure are specifically planned to heighten the preschooler's reasoning and perceptual skills (see Appendix, page 57).

Subjects of a highly conceptual nature such as social studies, science, and mathematics also fall under the heading, Cognitive Curriculum.

Science activities concerned the child with the world around him. He observed nature, performed simple experiments, and learned to question. Most important, each child heightened his ability to discover things for himself. Some very basic concepts drawn from the chemistry area of our science curriculum were:

. We recognize some things by their odor, taste, color, etc.
. Some things are difficult to wash off your hands.
. Some substances evaporate faster than others.

. Some objects bounce higher than others.
. Some substances are heavier than others of the same size.
. Some substances burn and some do not.
. Some substances dissolve in water.

Mathematical concepts also evolved within an environmental framework. These activities were concerned with the child's own relationship to size, space, measurement, and number. We believe that a child progresses toward understanding abstract concepts by handling, sorting, grouping, comparing, and classifying various objects. Our children frequently engaged in such activities. For a sample of the kinds of lesson plans which encourage learning in such areas, see Appendix, pages 61 to 64.

It wasn't expected that any educational program, except Primary Mental Abilities which was an already established curriculum study, would be developed in final form during Phase Two. This period was designated for experimentation and revision of programs. The Center did make an important organizational change during Phase Two. Cottage parents were assigned to complete responsibility for providing one and two year old children with a variety of semi-structured educational experiences each day. Some of these experiences have already been described in the discussion on general education.

Curriculum development specialists continued to take children out in small groups for direct instruction in specific areas such as Oral English, French, and music. The staff also continued to provide stimulation programs for those under one year old according to the individual child's receptivity, his sleeping and waking schedule.

PHASE THREE: CONSOLIDATING EFFORTS

The period from February 1969 to the present has been spent determining what was accomplished in curriculum development during phases one and two. It involves putting content for each program into sequence, and endeavoring to achieve a satisfactory balance of education programs, both general and structured. This has been an ongoing effort at the Frank Porter Graham Center.

The next section in this booklet describes how our Center proceeded to develop one of the *structured programs* we used, Oral English. We hope it will clarify for you the process of developing new curricula as we experienced it at Frank Porter Graham.

A Chronology in Oral English

Concentration on an oral language program is justified by the central role which language plays in the development of many intellectual abilities. That we use language not only to communicate, but in all aspects of human behavior suggests that it is the most pervasive content area. For this reason, we decided to use the Center's Oral English Program as an example for you on how to proceed in developing new curricula. Our progress is divided into specific time periods.

OCTOBER 1967 TO JANUARY 1968

The primary tasks of our Center's language program have been to create experiences and to devise teaching strategies and materials to help preschool children: acquire language skills more rapidly and at a younger age; improve verbal reasoning and the ability to form concepts; master the phonological system; lengthen attention span; use language spontaneously to communicate and learn.

Our first attempts to develop daily language-teaching episodes for children from infancy to age four raised many questions. We needed to know:

- which methods were most effective in presenting language stimuli and language principles to infants and young children;
- how to obtain reliable feedback from children's responses to language stimulation;
- whether individuals whose language patterns were not typically elaborated standard English should be excluded from working with children;
- the critical variables in preparing language instructional units;
- how to most effectively use audiovisual aids for instruction and demonstration.

For many questions there were no apparent answers. Decisions at the Center regarding "which way to go" were often arbitrary ones. We knew that we wanted to encourage children to continually interact with the environment we created, and that that environment needed to be rich in learning potential. We also knew that experiences gained within the Center should be age-appropriate, and tailored to encourage each child's special talent while compensating for deficiencies in him which hinder development. What we did

not know in October 1967 was how to proceed toward realizing these goals. Center staff endeavored to learn by experience. We would rely on the children to indicate what kind of curricula we could develop for them. By observing children we felt we would learn their needs, and knowing their needs we could presume to fulfill them.

When the instructional program in language was initiated in October 1967, there were 22 children at the Center ranging in age from three months to nearly 3½ years old. They exhibited a wide range of language skills as a result of their diverse cultural backgrounds.

During phase one of the language program, the language specialist presented 20 to 30 minute daily lessons to groups of infants, toddlers, two and three year olds. Because there were few teaching materials, it was an effort to present language concepts in a logical and meaningful way. We did rely on different studies of language development in young children in deciding which aspects of language might be appropriately introduced at Frank Porter Graham. Even speech improvement materials and language activities designed for preschool deaf children, especially the John Tracy Clinic's "Correspondence Course for Parents of Preschool Deaf Children," were useful.

Since we began to think of language instruction as an environmental input, staff at the Center established specific language goals for each of the age groups we dealt with. What follows is a brief description of the educational practices which we followed for each of the four age groups as part of the oral language program.

A language stimulation program *for infants* was begun to provide supplementary activities for day care workers which could serve as models for continuing a high level of verbal interaction with the children. For the infants, activities were planned to encourage them to vocalize more often, to heighten auditory awareness of speech, and to enhance attention span. An important aspect of the Center's program was the close interaction between child and language specialist.

Seven children, ages three to seven months, initially participated in the infant language program. They were generally from families on a low socioeconomic stratum. On occasion, all seven infants were available for the language presentation, but more often than not only three to five children were awake and ready to "play games." Materials for the games included brightly colored pictures of common nouns, finger games, flannel cutouts of a face, sound toys, balloons, nursery rhymes and songs.

Daily presentations were patterned after the way we assumed a loving, friendly, knowledgeable mother would interact with her own infant. We avoided a strict teacher-pupil or examiner-subject relationship. Our simple program consisted of five or six activities, all of which were intended to last only two or three minutes. If, however, an "instructor" determined that an infant was absorbed in a particular activity or object, he endeavored to sustain the child's interest by repeating or elaborating on the presentation. While the order and duration of activities varied from day to day, we generally followed this outline:

- The "instructor" began by greeting each infant by name. The greeting was in a low, pleasant voice accompanied by direct eye contact and a gentle pressure (pat) on the infant's stomach or head.

- After the greeting, there was a series of three or four finger games, such as patti-cake and itsy-bitsy spider. Infants were encouraged to respond by waving their hands or even clapping. If they did so, they were praised for their effort. Any attempts they made to vocalize received the same encouragement.

- Next, sound makers such as a cymbal, a bell, or marbles in a plastic jar were introduced. Each sound object had a corresponding picture reproduced in actual size and color on a large poster. The procedure was to make the sound for the infants and then "match" it to its picture.

- The next activity was looking at pictures. The language specialist held up a picture, labeled it, and invited the infants to look at it and pat it. Frequently, the specialist held infants one at a time while they looked at pictures.

- Instruction on the flannel board was next. The language specialist constructed the face of a child with pieces of flannel. As she did so, she named each part of the face and, with the help of a mirror, indicated corresponding parts on each infant's face.

- The final activity involved conversation between the infant and the language specialist. Each infant was picked up, cuddled, smiled at, and exposed to a variety of vowel and consonant sounds as well as oral motor movements. It was not unusual for a child to start a "conversation" by vocalizing in response to the language specialist's speech sounds.

The infant's attention span during the presentation lasted, in some instances, as long as 20 minutes. While individual attention varied, it was apparent to staff at Frank Porter Graham that infants generally found the language activities appealing (see Appendix, page 64).

Language goals for the *toddler group* of five children, 19 to 20 months old, included vocabulary expansion, auditory discrimination, identification of body parts, and development of two and three word constructions. Like the infant program, there was a standard method of presenting the half-hour daily teaching episodes to toddlers. Staff began with environmental sounds produced by a tape recording. Children were encouraged to identify and match

photo by Billy E. Barnes

the sounds with corresponding pictures. This activity was followed by flannel board stories and the construction of a child like figure so that its body parts could be named. We employed identity statements to encourage children to use sentences, and repeatedly emphasized the verb "to be." The remainder of the program involved finger and body games and concluded with individual teacher attention. During this age period we primarily worked at developing a comprehensive vocabulary in the children, and put less emphasis on an expressive vocabulary. Labeling objects in a treasure box was especially appealing to youngsters at this age.

At the end of our four month teaching period, the toddlers had an expressive vocabulary of between five and 50 words, and were easily using two and three word combinations. We never corrected children's first words. Generally, staff members tried to understand any effort children made at talking. They responded to it, and demonstrated in every way they could how important the children's words and meanings were.

The Center's language program for *two and three year old* children loosely followed the language instructional program of Bereiter and Engelmann. Their program was based on the principles of highly structured teaching aimed at development of pre-academic skills. It differed from other highly structured programs in technique. Bereiter and Engelmann emphasized flexibility and a gentle pacing of instructional activities.

Based on their program, our language specialist attempted to illustrate language principles, such as plural and negative formations, by using attractive, manipulative objects. We progressed from simple labeling and identity statements to the construction of sentence strings. After the first six weeks of the program, we no longer needed token rewards for attendance and performance. The children appeared to be highly motivated by social reinforcement as well as intrinsic interest. The two and three year olds were enthusiastic about playing games everyday.

Children age 25 to 30 months had an active vocabulary of between 200 and 750 words. They could listen accurately, purposefully and responsively. They were beginning to define objects in terms of function and manifested great skill in expressing their ideas correctly, as well as in novel and imaginative ways.

Children age 36 to 45 months possessed active vocabularies that were estimated to exceed 2,000 words. They were using identity statements, polar opposites, and correctly using prepositions in statements describing placement. They were beginning to name positive and negative instances for several word classes and could define common objects by use, description, and/or generic terms. They were able to use a few time phrases, and had mastered such initial hierarchy statements as "men and women are people," or "apples and oranges are fruit." Children in this age group were also beginning to comprehend aspects of size and time.

Although it was apparent that all children at the Frank Porter Graham Center were making significant progress in their language skills, we didn't feel we had gotten closer to realizing one particular curriculum goal. That initial goal involved developing "exportable curricula" which would be useful to

other day care centers. When we realized this had been neglected, the daily teaching program for children was concluded. In February 1968 we began to evaluate our program and revise its methodology.

FEBRUARY 1968 TO MAY 1968

The initial teaching experience with the children gave way to a second curriculum development activity. This involved the language specialist providing materials, lesson plans, and in-service training for generalist teachers and day care workers. It reflected the intent of the curriculum development staff to create and, hopefully, field test specific materials which could be used in early childhood education to enhance language. Major educational projects undertaken to achieve this involved:

- preparation of teaching episodes which would yield empirical data concerning the value of particular teaching methods, as well as measure children's achievement in language development;
- continued input of specific language experiences, materials and lesson plans into the general education program in order to learn whether or not the new lessons were adequate;
- efforts to determine what kinds of contributions paraprofessional personnel could make toward the overall effectiveness of a language instructional program.

The entire program between February and May 1968 was augmented by informal, in-service training of day care workers. Although the training program was rather loosely organized, it was hoped that the day care workers or generalist teachers would gain insight from it and learn practical techniques which would improve their encounters with children. There were informal conversations, conferences, and demonstrations of general lesson plans, as well as specific instructional materials (see Appendix, page 65). From this instruction, it was anticipated that day care workers would not only assume a more direct teaching role, but would also have enriched their own modes of verbal behavior enough to encourage a greater amount of spontaneous learning in the youngsters they cared for. Desirable characteristics in the staff's verbal style were those which would:

- provide the children in the day care units with good speech models;
- emphasize verbal labeling and methods of explaining objects, events, and their relationships;

- encourage development in language-related areas, such as storytelling, singing, and listening to music;

- use a conversational approach with children which involved not only repeating and expanding their utterances, but actively responding to them by giving specific answers, and following those by tactful inquiry.

From this chronology on how Frank Porter Graham proceeded to develop an educational program in oral English, we hope you have gained some insight into curriculum development for day care centers.

HEALTH CARE:

A Comprehensive Program

Frank Porter Graham's interest in the optimum development of the child dictated that our attention focus on the child's total environment–both internal and external. Care of the internal environment–the child's physical health–was the responsibility of those involved in the Center's health science program. The health program had three main goals:

- *to provide daily health care for the children of the Center*
- *to develop more efficient methods for providing such care*
- *to research specific areas of child health.*

DAILY HEALTH PROCEDURES

In order to fulfill our first objective, to provide health care for the Center's children, we developed a system of *daily examination.* Upon arrival at the Center each morning, parents submitted to staff members a written description of illness symptoms observed in their children. They even noted any unusual events which occurred during the night. Each child suspected to be ill was examined by a pediatric nurse whose special training enabled her to perform a basic physical examination, including inspection of the ears, nose, throat, chest and abdomen. If the illness was minor, the medical cottage parent took responsibility for the child. If the illness appeared to be more serious, the Center's pediatrician was consulted and necessary treatment was prescribed.

Initially, the Center's medical trailer was open all day on weekdays and also on Saturday mornings. Our medical research laboratory was equipped to process microbiological cultures, but specific blood tests and x-rays were given at North Carolina Memorial Hospital. The hospital is on the University

campus and only a short distance from the Frank Porter Graham Center. All parents were instructed to use the hospital emergency room if acute problems arose during times when the Center's medical facilities were not available. In most cases, we were able to initiate care at the Center so that emergency room visits were unnecessary. If an isolated case required a visit to the emergency room, however, we could easily maintain communications with the hospital because the Center's pediatrician was on the hospital staff.

It has been our policy that once a decision is made concerning treatment of a sick child, a plan for care is sent to the medical cottage parent, to the child's home, and one copy is kept in the Center's files. Information is sent to the home to insure that parents continue prescribed care. Except in the case of a highly contagious disease like chickenpox or measles, a sick child can remain at Frank Porter Graham. He is not isolated from the other children.

Allowing sick children to come to and remain at the Center was an innovation in day care. In many ways, this practice is socially significant. A mother often has difficulty arranging to stay home from work, school, etc., when it is determined her child is ill. Finding alternative care, such as a babysitter, often compounds the problem. Substitute situations, such as an older sibling staying home from school with a sick child, are common though undesirable. Consequently, a child kept home because of illness often gets less adequate care than if he remains at his day care center. New standards issued by the American Academy of Pediatrics support this viewpoint.

A second aspect to consider is isolating the sick from well children in a group setting. In our experience, *isolation is unnecessary.* Allowing sick children to mingle has not caused increased illness. If an ailing child at Frank Porter Graham wants to rest, he may separate himself from the group to do so, but staff members encourage any child who wishes to, to go ahead and participate in activities which appeal to him. We have been impressed with the ability of the sick child to regulate his own tempo, taking naps as he needs them and remaining active when he feels well enough. During our first two years, absenteeism caused by illness was practically unknown at Frank Porter Graham.

DEVELOPING EFFICIENT METHODS

A second objective of our health program was to increase the skills of all personnel concerned with the children's health. This resulted in a transfer of some duties. For example, the pediatric nurse assumed many of the health care responsibilities that had formerly been the realm of the pediatrician. Such time-consuming tasks as scheduling immunizations, parental counseling, and well-child evaluations became part of her job.

Licensed practical nurses in the cottage polished their skills and assumed responsibilities in health screening. Training programs conducted for the day care workers augmented their effectiveness in areas of child health maintenance, such as sanitation and personal hygiene.

RESEARCH ACTIVITIES

A third broad goal of Frank Porter Graham's health care program was to research specific areas of child health. Medical research at the Center focused primarily upon the study of infectious respiratory disease. We sought answers to some basic questions: how frequently does respiratory disease occur in group day care; what viral agents are responsible; what is the role of natural immunity; is it possible to intervene to reduce the incidence of respiratory disease?

Our health staff found that respiratory illness rates among the Center's children were not excessive when compared with rates of such illness in children cared for at home. The highest incidence occurred in infants, then gradually decreased as children grew older. There was a correlation between how often viral agents were isolated from children in the home and isolated from those in group care at the Center. Viral agents appeared to behave in similar ways in both situations. We identified a few viral agents as those which caused the more severe respiratory diseases in both groups. These included respiratory syncytial virus, the parainfluenza viruses, and certain adenovirus serotypes.

It seemed important to determine whether recurrent infections of the same virus or bacteria happen in nature or whether the host develops specific methods of preventing reinfection. This question can best be answered through longitudinal study. We found a day care center ideally suited to this purpose. Studies conducted at Frank Porter Graham suggest that some of the most important respiratory agents in children are capable of reinfecting the preschool child several times, and that natural immunity to these agents is not very effective. Reinfections do, however, cause less severe illness than the initial infection.

It's thought that vaccines are the most likely means of preventing respiratory illness. Children at the Center have participated in two vaccine trials, but neither vaccine prevented illness from occurring.

It was these kinds of research activities which allowed us to establish certain health procedures with confidence. Health research is an additional reason for maintaining a child population at Frank Porter Graham.

The experience of providing health care to children at our Center, as well as the data we've accumulated from research studies in the etiology of infectious disease has led us to form certain concepts. These views are not yet completely supported by firm data, but represent our current working hypothesis:

- A day care center provides an ideal setting for a nurse practitioner to employ her skills both in care of the well child and in screening of sick children.

- Young infants can be cared for in group day care without excessive amounts of illness developing if there is adequate staffing, sanitation, space, and medical supervision.

- Isolation of sick children is not necessary if adequate precautions are taken to maintain a good overall environment.

- Stable well-trained staff members who are constantly with children, plus adequate facilities, are necessary to maintain a healthy day care environment.

ESTABLISHING A HEALTH CARE SYSTEM

The system of health care at the Frank Porter Graham Center is possible because the Center is part of a university affiliated program. We are able to tap the resources of several schools and departments of the University of North Carolina. A most important aspect of our health program is the very close cooperation between the Center and the Infectious Disease Laboratory of the University's Department of Pediatrics. A pediatrician from the laboratory has provided health care for our children and directed the respiratory disease research program. Through cooperation of the University's Dental School, the Center is able to provide dental care for the children and initiate research into aspects of dental health. The School of Nursing and the School of Public Health has assisted in our nurse practitioner program. A genetics research project has been started in association with the Department of Biostatistics of the School of Public Health. We hope that many other departments and schools of the University can contribute at different times and in different ways to the Center's total health program. In fact, the overall substance of our health care and health research programs is strongly influenced by resources which are available to us at the University.

Such a situation does not exist for most day care centers. Usually there are several private physicians providing care to the enrolled children, so that responsibility is diffused. Often there is a lack of health manpower, including registered nurses (RN), pediatricians, and licensed practical nurses (LPN). Even if personnel is available, the cost is prohibitive to many centers.

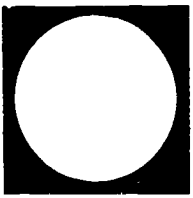
There are, however, certain features that should be common to all day care centers. First, it is important to have *at least one person* designated to oversee health care. Health personnel are essential, although they need not always be health professionals. If it is not feasible to employ an RN or LPN to be responsible for the children's routine health care, an individual without medical experience can do the job. This person should undergo a period of on-the-job training, preferably conducted by an RN. Responsibilities of this employee are to report the occurrence of illness to people trained to treat it, and to provide routine care, such as assuring that a sick child receives fluids and rest as needed, or medications when they are prescribed. Overseeing sanitary conditions of the environment falls into this realm. Such a day care worker is responsible for health care in much the same capacity as a child's mother in the home.

Secondly, all centers should have one health professional to coordinate planning and be responsible for the total health care program. This may be a nurse or a physician. In such a role, a person need not provide direct health

care for preschoolers who have a private physician, but should discuss problems of individual children with the doctors responsible for them. The health professional must be concerned that no health hazards exist at the Center, employ a method of detecting chronic or acute problems in children which deserve special medical attention, and help set policies concerning the isolation of sick children, food handling, etc.

Finally, each Center should have an established system of contacting the health professionals responsible for providing medical care to each child. The names and phone numbers of children's private physicians should be on file, and communication with them should take place not only to treat, but to prevent serious illness and emergencies.

It might be economically attractive for a number of small day care centers in neighboring areas to jointly hire a health professional to serve them. A registered nurse or nurse practitioner could fill the slot–supervising health care and screening illness. This person would maintain liaison with the non-professional health care worker at each of the centers, and consult on the centers' health problems as well as those of individual children. As a health professional, he or she should be able to deal effectively with other providers of health care in the community, such as the children's private physicians. The extent of responsibilities would depend upon local factors, the individual's skill, the availability of other medical resources, and the number of children involved.



THE FUTURE:

A More Perfect Past

A lot has been accomplished at the Frank Porter Graham Child Development Center, although much remains to do. The two facets of our total program which drew initial support -the *day care* and *comprehensive health care programs* have been strengthened through periods of trial and error. Now we can advance forward on more firm footing.

What we have outlined for you in this booklet is what we consider our pilot program. The experiences gained during the pilot stage at the Center provided a sturdy cornerstone on which to build a permanent program. By sharing these experiences, we hope to ease the growing pains of others who have the interest and capability of establishing a comprehensive program in child development.

APPENDIX

SAMPLE IN-SERVICE TRAINING TECHNIQUES FOR TEACHING SMALL GROUPS

1. Rely upon real or at least realistic objects throughout the initial stages of concept instructions.

2. Keep your speech rate and voice quality natural.

3. Do not hurry children, but be sensitive and skillful about varying the lesson pace to keep children alert and attentive. Initially, conclude teaching episodes before the individual or group manifests symptoms of restlessness. This may mean less will be accomplished at first but it should result in later willingness to remain for longer sessions.

4. Utilize the sentence completion method for purposes of providing children practice in developing longer (and hopefully more accurate) phrases and sentences; *e.g.*,
   Teacher: "Where is the spoon?
   The spoon is _____ ."
   Child: "Under the cup."

5. Discover value of alerting devices–clapping, tapping, touching–for the purposes of directing children's attention.

6. Use *short* explanations. Demonstrate with puppets or objects the desired response. Avoid *telling* children the central goal or process. Let them discover the principle (and later, hopefully, verbalize it) unencumbered by too much and, therefore, useless talk.

7. Aim questions at children's maturational level:

What?	}	Questions are perhaps easier than . . .
Where?		
Who?		
Why?	}	these questions.
How?		

8. *Reward,* by whatever effective means appropriate, children's "thinking" responses. Let children know you approve of their thoughtful approaches even if they lead to totally incorrect answers. Do this even for partially correct replies. Emphasize the degree of accuracy rather than of inaccuracy.

9. Reward listening behavior.

10. Make rules of behavior explicit on first encounter with children during game playing time. Teacher should be watchful of child's first testing of rules and be prepared to define such acts as "friendly or unfriendly," "listening carefully," or "not listening carefully." The negative aspect can be virtually omitted if teacher observes promptly and frequently when children are following basic rules for game playing.

11. When inviting preschoolers to "play games," select the time and situation which will reduce the possibility of a negative response. Initially, it may be wise to have something (an attractive object or a "mystery box") in your hand which will evoke their interest and curiosity, and, hence, subsequent involvement. Avoid teacher questions that invite a negative reply from a reluctant child:

    e.g., Teacher: "Would you like to play games?"
    Child: (If he says "yes," no problem, but what will you do if the child says "no"? The alternatives are: 1. try to convince him to reconsider so you can complete your task and run the risk of the child believing that you really didn't want to know what he wanted to do in the first place; or 2. accept his answer, hoping that the next time he will participate.)

    However, recognize that there will be times when children will have valid if unapparent reasons for not participating in the teaching episodes, and permit them appropriate latitude.

12. Dramatize the value of learning whenever possible.

13. Utilize varied techniques of practice and review. Use lots of examples.

FRANK PORTER GRAHAM

CHILD DEVELOPMENT CENTER

UNIVERSITY OF NORTH CAROLINA

General Practices at Lunch Time **Circulation Dates May 8 - 22**

I. General plan for table arrangement and adult supervision.

   A. Tables will be arranged for children to eat in three smaller groups rather than at one large table and one small table.

   B. There will be an adult at each table.

   C. Children may choose their places to sit as usual, unless the adults in charge feel it is necessary to make special arrangements–i.e. if a younger child needs special help, or if a combination of children seems particularly disruptive or unruly. Mr. Horton will have the final "say" about such arrangements.

II. Availability and serving of food.

A. Plates are served in the kitchen with small portions of every food.

B. They are put on the table all at once.

C. Children do not sit down until plates are all set.

D. Food will be "ready to eat" when brought to the table–e.g. meats cut up, fruit in proper size pieces, etc.

E. Dishes with food for "seconds" are on a tea cart immediately available to the adults at the table, who will serve the children requesting more food.

F. Milk will be placed in a pitcher at each table and will be poured by the adult at the table, beginning with 1/3 to 1/2 glassful, and replenished in small amounts as the child wishes more. (Older children may be allowed to pour their own milk if the adult at the table gives approval.)

G. "Seconds" of a food will not be served until the child has taken at least a "taste" of each food on the plate.

H. Dessert will remain in the kitchen until all children have finished eating their first course.*

I. No child may have dessert unless he has at least tasted all foods served at the main course.

III. Behavior in regard to eating.

A. Consistency in adult behavior is essential.

1. Encouragement and praise is all right but should not be overdone. No "issue" should be made of eating or not eating.

2. Comparisons of eating habits from one child to another should be minimized.

3. Insistence on a certain few essentials will help to make mealtime more pleasant, and may help to solve some of our previous problems.

a. Shouting, screaming, and demanding do *not* gain the desired end. If a child wants something, he must ask for it quietly and in turn. If shouting continues, the child will be told quietly but firmly that he cannot have what he is demanding.

b. If a child continues to be disruptive, he may be asked to leave the table and sit quietly elsewhere by himself.

B. Mr. Horton is in charge at mealtime and all questions of procedure will be referred to him.

*(Exceptions may he made if, in Mr. Horton's opinion, one or another child eats very slowly or needs more help, and the rest should not be kept waiting until he is ready for dessert.)

C. Children are expected to say "please," and "thank you," to wait their turns, and to ask to be excused when they have finished eating. If they leave the table, they may not return.

D. Children are expected to wait until all are served before they begin to eat.

E. Eating finger foods with fingers, and other foods with forks and spoons is to be encouraged.

F. Spills and upsets will be cleaned up without comment, with the child responsible helping wherever practical.

SAMPLE LESSON PLAN

(Smell, Taste, Sight)
CONCEPT Sensory Experience STUDENT Small Groups

TEACHER _____ Date _____

INSTRUCTIONAL OBJECTIVE

OBJECTIVE:

1. Name the substance. 2. tell if it is sweet or sour by smelling, then tasting, then looking.

CRITERIA:

Name 5 out of 10 substances by smell or taste without being shown the product container.

MATERIALS: 10 baby food glass jars with lids, liquid tea and teabag, katsup bottle, flour, sugar, cinnamon can, lemon juice jar, peanut butter jar, vanilla jar, vinegar jar, chocolate syrup can.

PROCEDURE:

1. Tell the children that they are going to smell some things to see if they can guess what each is. Ask them to close their eyes.
2. Present one substance in a glass jar. Let each child smell and guess. If the child does not know, ask: "Is it a sweet or sour smell?"
3. If the child cannot guess correctly by smelling, let him taste if he chooses.
4. If the child needs further assistance, show him the product container in which the substance is bought and kept. (peanut butter jar)
5. Talk about each substance: its color, smell, uses, where it comes from.
6. Even if the child guesses the substance correctly on the first step–smelling, let him experience tasting, and seeing the container to help him form his mental set of the substance.

This experience was a success with the children. They met the criteria and were very interested in each substance presented.

EXAMPLES FROM LEARNING TO THINK SERIES

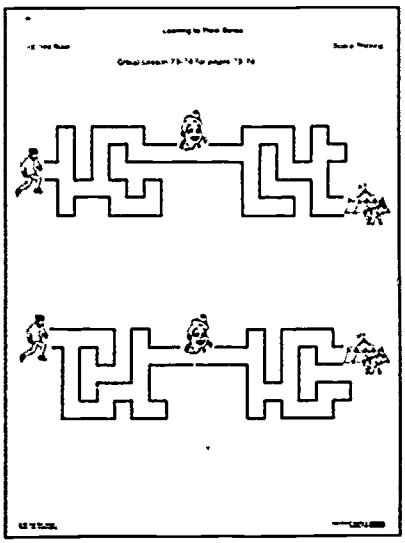
73-74 SPACE THINKING–MAZES

GROUP LESSON The boy *(point to top picture)* wants to see the clown on his way to the circus tent. He wants to go the shortest way. He should go this way *(trace the path all the way through with a pointer or your finger).*

Now I want several of you to show me with your finger the way the boy should go to see the clown and go on to the tent. Be careful which way you turn. *(Have several children trace the path with their finger.)*

I will draw a line to show which way the boy should go. *(Draw a line to show the shortest way.)*

Here is another picture. The paths are different. How should the boy go? *(Have several children trace the path with their finger.)* Who will draw a line to show the path?



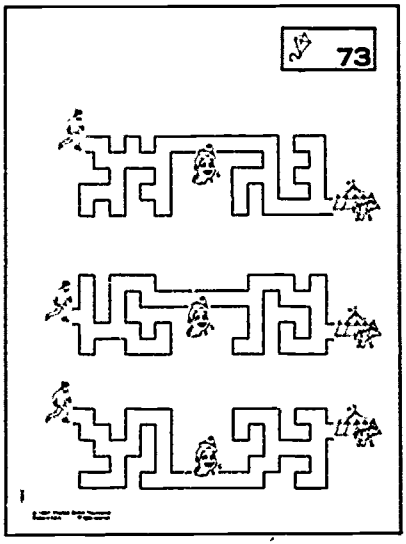
RED BOOK LESSON Now you are going to draw some lines in the same way in your Red Book.

Open your book to the pages with the picture of the kite at the top. Put a mark on this picture.

In each problem on this page you are to find the shortest way for the boy to go to the tent by way of the clown. Trace the path with your finger until you are sure you have found the shortest way. Then mark the shortest way.

Watch to see that the children are marking the shortest way.

Go on to the next page.



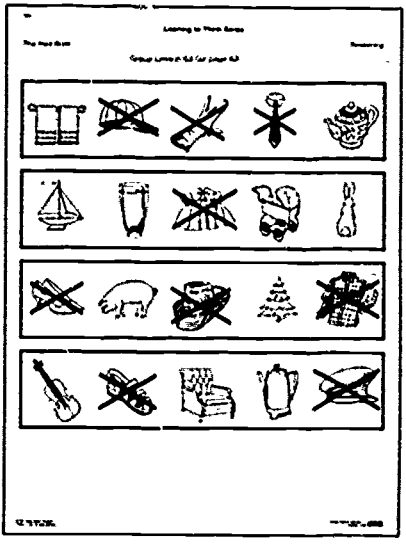
63 REASONING—CLASSIFICATION

GROUP LESSON On this chart we are going to look for pictures of clothing, or things that we wear. We will find the pictures in each row and then we will mark all the pictures of things to wear. *(Discuss any pictures that are not clear to the children.)*

Look at the first row of pictures. Which are pictures of clothing?

Continue in the same way for the other rows of pictures.

Now we will mark all the pictures of things to wear. *(Have different children mark the pictures in each of the rows.)*

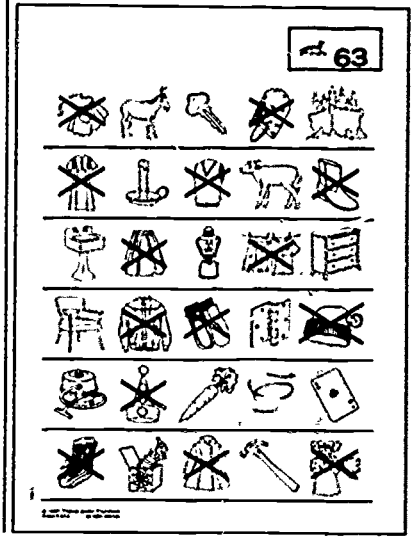


RED BOOK LESSON Now you are going to mark some pictures in the same way in your Red Book.

Open your book to the page with the picture of the soldier's cap at the top. It is something to wear, so we will put a mark on it.

Put your card under the first row of pictures. Mark every picture of something to wear that you can find in this row.

Slide your card down under the next row of pictures. Mark all the pictures you can find of things to wear. *Continue in this way until the page is finished.*



93-94 VERBAL MEANING—SENTENCE COMPLETION

GROUP LESSON Listen closely to what I read to you.

1. If you want to cut an apple, you should use a _____.

Can you finish what I read? One of the pictures in this row *(the first)* will finish this little story. Which is the picture? *(Children will answer knife.)* That's right, it is the paring knife. The whole story would say:

"If you want to cut an apple, you should use a paring knife."

If the task is not clear, ask such questions as "Do you use scissors to cut an apple?" and "Do you use a saw to cut an apple?"

Will someone mark the paring knife to show that it is the answer? *(Have a child do that.)*

The other three sentences are presented in the same way:

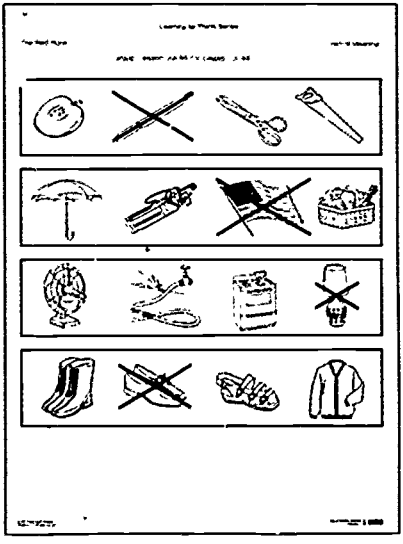
2. The soldier leading the parade was carrying a _____.
3. When it gets dark, you should turn on the _____.
4. Billy is learning to tie his _____.

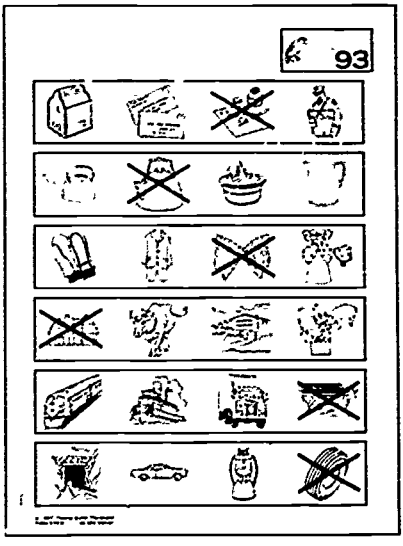
RED BOOK LESSON Open your Red Book to the page with the picture of the parrot at the top. Mark the picture.

Read the sentences as in the group lesson:

1. I would write a letter if I had _____.
2. Mother heats water in a _____.
3. In her hair Ruth wears a _____.
4. The farmer keeps his animals in a _____.
5. The train crosses the river on a _____.
6. An automobile must have a _____.

Go on to the next page.





SAMPLE LESSONS
KATY THE KANGAROO

An important part of the plan for training infants under three years of age is the construction of lessons, materials, and teaching devices to accelerate the development of cognitive skills. The training will involve lessons in fine motor coordination, perceptual accuracy and selectivity, receptive and expressive language, and reasoning. The areas of training are based on statistical studies of the Primary Mental Abilities of Children.*

The next few pages illustrate a few of the lessons which have already been put into use at the Frank Porter Graham Child Development Center. A brief description of each of ten lessons is given below. The lessons are not presented in the order in which they are shown here.

These lessons are all structural in arrangement and purpose, but the teacher is to adapt the method of presentation rather than to follow a precise script. The lessons may be used with individual children or with small groups. The time required for each lesson may be only a few minutes and will never be more than fifteen or twenty minutes.

Presenting Katy

The ten lessons presented here all involve the use of a large, colored matboard figure of Katy–a kangaroo. Katy has a bright-colored plastic apron with nine transparent plastic pockets. Katy is three feet tall and is supported by a firm tail (not shown in the front view) so that she can be used on the floor or on a low table.

The Lessons

Lesson 1. Four bright-colored figures (all the same color) are placed in the top row of four pockets. The pocket on her chest contains twenty cards, five identical with each of the four figures. These cards are placed so that the back shows through the plastic. The children draw one card at a time from this pack and place it in the second row of pockets directly under the sample card in the first row. In the illustration of Katy, the children have already drawn and placed correctly the circle, the square, and the triangle. Children sometimes want to "play the game" for a longer time. The cards from the second row are then assembled, shuffled, and placed in the top pocket, and the game goes on.

Lesson 2. The four colored cards shown are placed in any order in the first row of four pockets. The task is to draw cards one at a time from the top pocket and place them in the second row of pockets so that they match the color of the card above them in the first row.

Lesson 3. The four cards shown in the illustration show pictures of one, two, three, and four candy canes. The task is to match the cards on the basis of number. With very young children, only three, or even only two numbers are used.

Lesson 4. The four cards shown all have four orange dots, but the arrangement or pattern of the dots varies. The task is to match the patterns.

*L. L. Thurstone, Primary Mental Abilities, Psychometric Monographs No. 1, Univ. of Chicago Press, 1938.

L. L. Thurstone and Thelma Gwinn Thurstone, Psychometric Monographs No. 2, Univ. of Chicago Press, 1941.

Lesson 5. The four cards shown have pictures of four Jack-O'-Lanterns, varying in size only. The task is to match the pictures in size. For very young children two pictures, the largest and the smallest, are used.

Summary. These five lessons develop perceptual accuracy and the concepts of shape, color, number, arrangement, and size.

Lesson 6. The four cards used in this lesson show pictures of four people—a man, a baby, a woman, and a girl. The child's task is to match the pictures in the top pocket with the four pictures presented.

Lesson 7. The four cards presented show pictures of four kinds of fruit. The procedure is similar to that of Lesson 6.

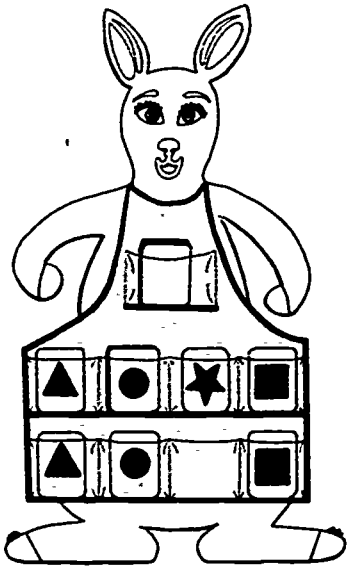
Lesson 8. The four cards presented show pictures of four elephants. The procedure is similar to Lesson 6. Greater perceptual precision is required in this lesson.

Summary. These three lessons are planned to develop perceptual precision or accuracy. The difficulty of the lessons covers a wide range.

Lesson 9. The four pictures presented in the top row of four pockets show a girl, a man, a woman, and a boy. The pictures on the cards in the pocket at the top include five pictures each of men, women, boys, and girls, all different, and none identical with the four pictures presented. The child's task is to classify the pictures, as shown in the second row of four pictures. The thinking involved goes beyond perceptual accuracy to a simple form of reasoning.

Lesson 10. The four cards presented contain pictures of four classes of animals—animals that can fly, wild animals, animals that live in the water, and farm animals. The pictures in the top pocket contain five pictures of each of these classes of animals which the children sort into the appropriate pockets in the second row of four pockets.

Summary. The last two lessons are planned to develop a simple kind of reasoning or abstraction. We call the task classification and the lessons cover a wide range of difficulty.



KATY
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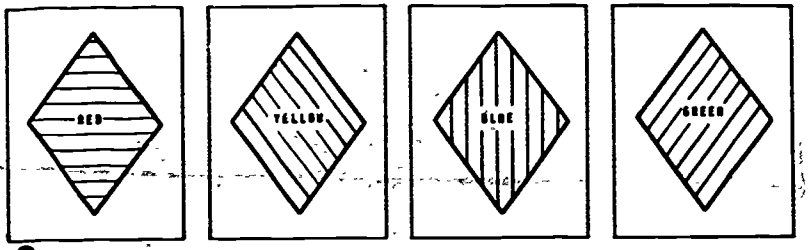

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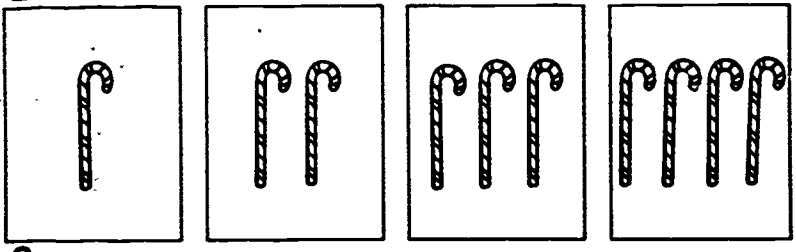

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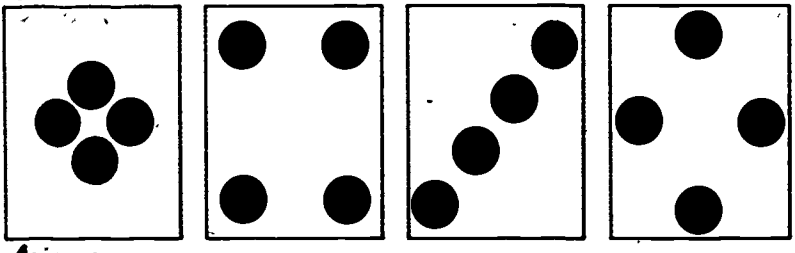

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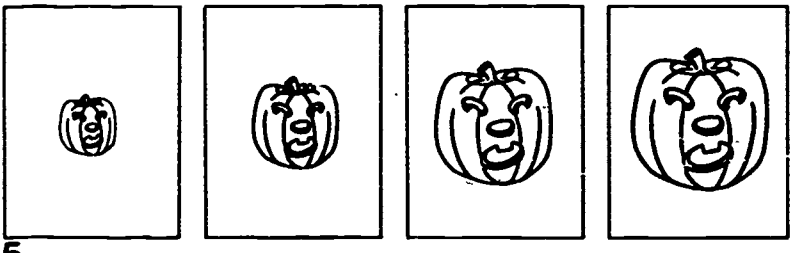

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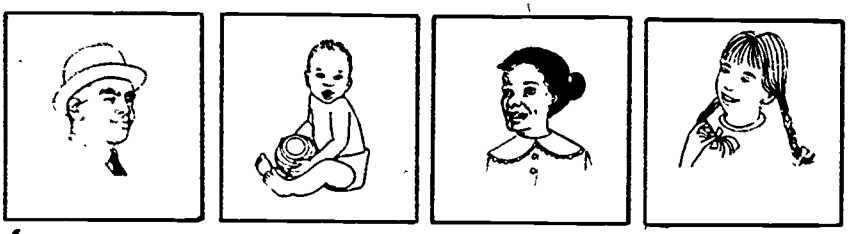

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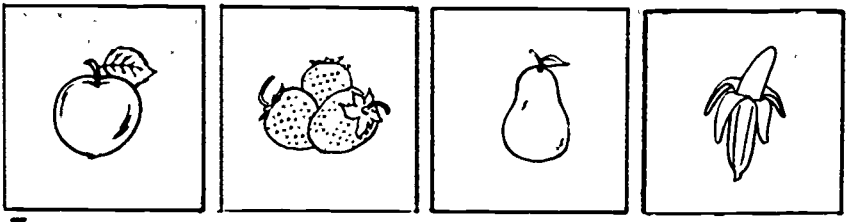

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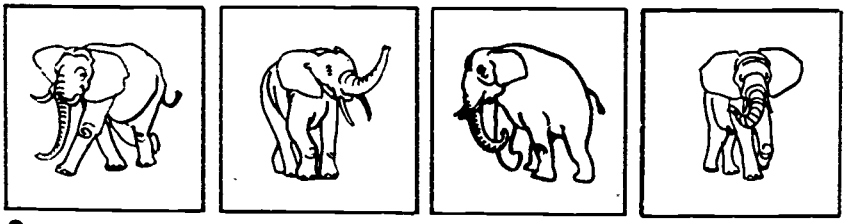

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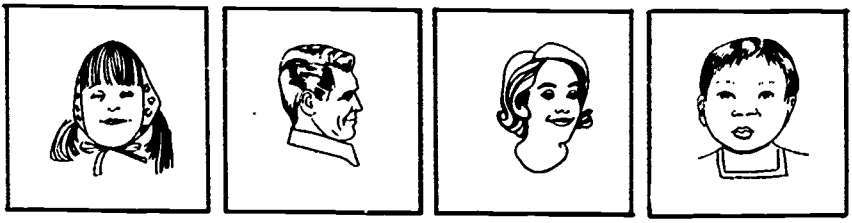

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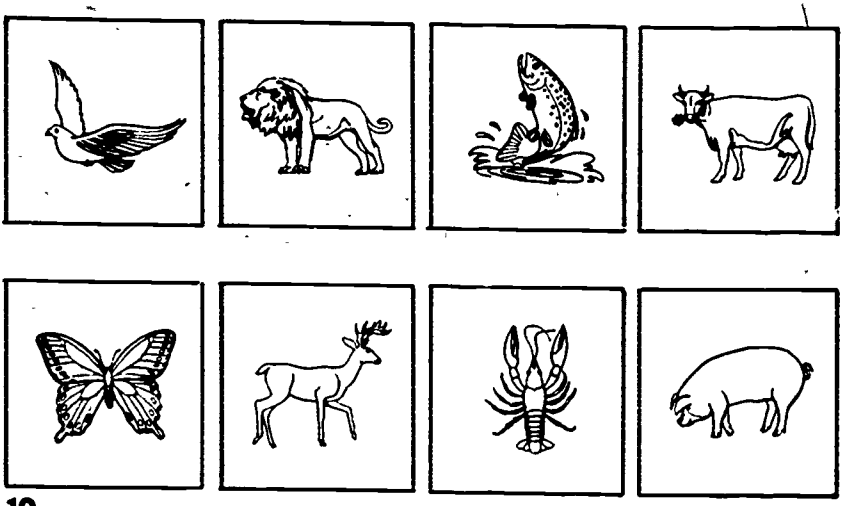

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SAMPLE CURRICULUM
SOCIAL STUDIES

Young children learn social studies through the use of units of interest, field trips, resource people and projects. Some of our units of interest have been: Communication; Special Occasions, Holidays; People in Other Lands; All About Me; Home and Family; Community Helpers.

Some related activities that can be used are:

- Weigh and measure children for growth. Discuss what they like and don't like.
- Provide mirrors in classroom for children to see themselves.
- Take a walk in neighborhood to see houses–brick, frame, apartment houses, housing projects, etc.
- Talk about roles of family members and engage in dramatic play of home activities like cooking, cleaning, washing, caring for baby, etc.
- Talk about how money is secured and spent in the home.
- Invite a fireman, policeman, dairyman, nurse, etc. to come to classroom to tell about duties and to answer questions children may have. Role play some situations discussed.
- Visit fire station, grocery store, police station, museum and other community facilities.
- Use filmstrips, records, movies, etc. to describe the use of trains, airplanes, busses and other forms of transportation.

SAMPLE CURRICULUM
MATHEMATICS

Mathematics in the preschool program involves sets and numbers. The following is a brief outline, including some activities, of the sequence that is followed in the classroom:

I. *Sets*

A. Exposure to classification of objects.

Objective: To have children return objects to their proper places, provided places have been designated.

Activities –Have children help arrange unit blocks in storage bins according to shapes. Label areas with pictures of the shape that should go in each section.

–Draw outline of tools on pegboard so that child may place each tool in its proper place.

B. Explanation & Discovery of Basic Ideas and Language of Sets.

Objective: Given experiences in sorting and classifying things in his environment, and hearing the appropriate language, the child can use this language to identify sets around him.

Activities –Ask children about sets.
"How many members are in the set of boys today?"
"How many members are using the work bench now?"

–Have children play "Find The Set" games, such as set of mittens, of boots, of blue sweaters, pictures, etc.

C. Members of a Set

Objectives: To verbally describe sets to child, so that he can distinguish between members of a set and things which are not members.

Activities –Involve a few children at a time in making sets. Use small items which may be handled easily. Ask the children to select a set of: (1) things that are hard; (2) things that roll; (3) things that are soft; (4) things that make noise.

D. Matching – One-to-One Correspondence

Objectives: Given two equivalent sets of objects or pictures, the student can *demonstrate* a one-to-one matching between members of the sets by physically associating the objects or pictures.

Activities –Show the children 5 pencils and 5 blocks. Tell them that you want someone to show whether there are

just as many members in the set of pencils as there are in the set of blocks. After a child has done the matching have the children discuss the fact that for each pencil there is a block and for each block there is a pencil.

II. Numbers

A. Natural numbers such as cardinal and ordinal, one through five

Objective: Through hearing verbal use of cardinal and ordinal numbers, the child *adopts* them as part of his own vocabulary.

Activities –Have children counting aloud in group.

–Have children help count candles, beads, napkins.

–Instruct children to put items away by giving them directions which designate order such as, "put the puzzle on the *second* shelf."

B. Discovery and Exploration in Counting and Comparing

Object: Given an environment containing a variety of activities, the child hears, responds to and uses language dealing with comparisons such as in the question: how many?

Activities –During an art lesson, you may ask: who has three clowns in their picture; how many colors did you use in that painting; have you painted more pictures than John?

C. Counting

Objective: Given a set of objects, the child can count the members of the set and say corresponding numbers as he touches each member.

Activities –Give children opportunity to count by touching and separating items as they count. Begin with big objects.

–Play store. Counting objects bought or sold as well as play money used.

D. Cardinal use of Numbers One through Five

Objective: The child can recognize numerals and match them with corresponding number of objects

–Given a specific set child can name the number in it then select the corresponding numeral.

E. Natural Numbers

Objective: Given a number such as 5, either spoken or written the child can identify and form sets containing the given number of members.

–Given a shuffled set of numeral cards, the child can arrange them in order.

SAMPLE LESSON
BABBLE BOUNCE

Name of the Game: "Babble Bounce"
Appropriate Age: Two to five month old infants
Interaction: Individual
Position: Caretaker's position: seated, cradling baby in lap, baby's head cupped in caretaker's hands; face-to-face encounter so baby can watch caretaker's face and lips.
Action:

1. After baby has been fed and changed and is comfortable, repeat (several times) some sounds with which he might be familiar in various patterns; e.g.,
   paired back vowels: "ahh-ahh"
   mixed vowels: "ahh-uhh", "oo", "eee"
   sustained consonants: "m-m-m"
   step consonants: "p-p-p-p"
2. Vary your loudness and pitch to make sounds more interesting.
3. Smile and cuddle baby when "talking" to him.
4. Give baby time to make his own sounds. This reaction can be encouraged by "turning off" your smiling face when you've finished talking. Baby then seems to recognize that you are waiting for him to do something, to make a sound. When he does make a sound, whether or not by accident, laugh, smile, pat or "nuzzle" him. If he doesn't vocalize, continue to pause a few seconds after each series of your sound patterns. The baby will catch on to this kind of imitative play and keep the conversational ball rolling.
5. Introduce words and phrases as appropriate; also environmental or animal sounds for sake of variety.
6. Avoid bouncing baby unnecessarily or bobbing your head as you talk. Speech movements are small. If child is distracted from observing them by gross motor movements, much value of the activity can be lost.

Aim of the Game:

1. To increase amount and frequency of speech-like sounds.
2. To help baby develop a wide range of speech sounds, by listening to the caretaker model and by imitating the caretaker model.

SAMPLE-LANGUAGE STIMULATION STRATEGY

Instructions to Cottage Parents
Concerning Verbal Bombardment, Language Instruction Techniques

The purpose of these suggestions is to help each cottage parent increase the oral communication skills of the children while they are in their care. Depending upon the age and overall development of the children, verbal output as well as skill in language will vary considerably. These suggestions, however, are for the children who are just beginning to talk, between the ages of 10 months to 2 years. The value of these brief suggestions, however, should increase as each worker makes substantial efforts to interpret them in as many ways possible. Being conscious of these five points should lead to more imaginative efforts in verbal communications between cottage parents and children.

1. Keep your statements short and simple, not more than 3 or 4 words long, concerning the activity in which the child is engaged or the toys with which he is playing. The technique of asking, then answering your own questions pertinent to an individual child's activity may be helpful. Example: "Who is taking such big steps? Why Scottie is walking now!"

2. Repeat your statement frequently. This repetition can be supplied more effectively if the statement is occasionally sung by the cottage parent. Repetition has more meaning then.

3. Talk about only those things you are sure the children will understand, such as the cottage unit, the toys in the room, the people they see, the activities that take place during feeding or changing.

4. Respond to each and every attempt made by any child who speaks, even though it is only a "noise". Respond by imitating him if possible. If imitation is impossible because the sound is completely unfamiliar to adult speech, praise the child by saying things like: that's good, that's fine; or I like to hear you talk. Almost *every* vocalization by any child should receive immediate attention. (Except shrill screams.)

5. Children's "noises" sometimes sound very much like words. When this occurs, the word should be fed back to the child, rather than trying to imitate his noise. If there is a movement or gesture for the word (such as "jump, me," etc.,) you should use this gesture with the word as you say it.