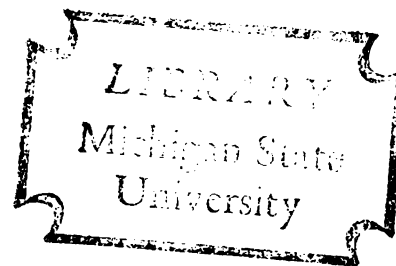


THE DEVELOPMENT OF A PRE-ACADEMIC
INSTRUCTIONAL PROGRAM FOR THE
MODERATELY AND SEVERELY
MENTALLY RETARDED

Dissertation for the Degree of Ph. D.
MICHIGAN STATE UNIVERSITY
SISTER BARBARA CLINE, F. S. E.
1977



This is to certify that the

thesis entitled

THE DEVELOPMENT OF A PRE-ACADEMIC
INSTRUCTIONAL PROGRAM FOR THE
MODERATELY AND SEVERELY
MENTALLY RETARDED

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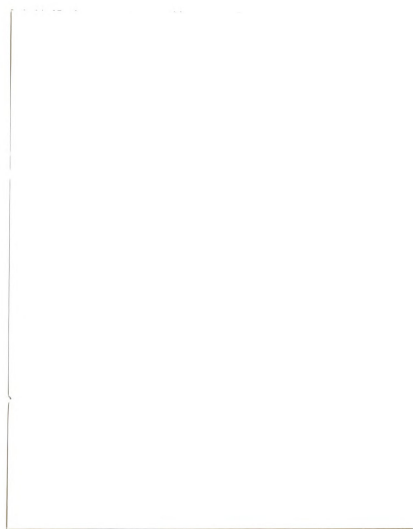
Sister Barbara Cline, F.S.E.

has been accepted towards fulfillment
of the requirements for

Ph.D. _____ degree in Elementary and
Special Education
(Special Education -
Administration)

Charles E. Henley
Major professor

Date April 19, 1977





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ABSTRACT

THE DEVELOPMENT OF A PRE-ACADEMIC INSTRUCTIONAL PROGRAM FOR THE MODERATELY AND SEVERELY MENTALLY RETARDED

By

Sister Barbara Cline, F.S.E.

The purpose of this study was (1) to establish a developmental sequence of readiness skills that would prepare moderately and severely retarded students for instruction in functional academics and vocational training, (2) to develop a means of assessing students capabilities and learning modalities in the areas of development proposed in the sequence, (3) to develop a method of teaching basic concepts, i.e. readiness skills, through concrete sensory manipulation of objects in a systematic unit of instruction. The processes involved in developing these three areas was paramount to this study.

Upon completion of the first draft a study population was selected consisting of moderately and severely mentally impaired students, to take part in a pilot study to determine the appropriate sequencing of the skills. Once the skills were ordered a field study was undertaken to test the feasibility of the proposed methodology as well as the assessment format in the instruction of moderately and severely retarded students.

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Preceding both the pilot study and the field test, inservice was provided to the participating staff. Both investigations were concluded with the staff critiquing the procedures and materials used. This feedback formed the basis for the revision and the adaptations of the program.

The resulting curriculum consists of fifty-five lessons with each lesson divided into four parts: exploration, identity, recognition and recall; and an assessment instrument to determine the level of the students skills prior to instruction.

The entire curriculum is intended for moderately and severely retarded students functioning between the mental ages of two and five years.

THE DEVELOPMENT OF A PRE-ACADEMIC
INSTRUCTIONAL PROGRAM FOR THE
MODERATELY AND SEVERELY
MENTALLY RETARDED

By

^{Tean}
Sister Barbara Cline, F.S.E.

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Elementary and Special
Education

1977

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ACKNOWLEDGEMENTS

This study is the result of the consideration and encouragement of many individuals. I am especially grateful to my committee, particularly Dr. Charles Henley, committee chairman, whose thoughtful advice and prompt assistance throughout this study was invaluable and positively offered. I am also grateful to Dr. Donald Burke for his valuable assistance in completing this study. And to Dr. Richard Featherstone and Dr. Eileen Earhart for their continued support, gratitude is due.

I am indebted to many persons within the Pontiac School System for their support and enthusiasm. Paramount among them is Mr. William G. Wright, Director of Special Education, without whose interest, understanding and encouragement this work could not have been accomplished.

The staff at Hawthorne Learning Center deserve my sincere thanks, especially M. June Ormiston, Peggy Rickard, Winifred Evans, Fran Koch, Karen Lantzy, Joan Montgomery, Craig Gough, Lori Keebough, Dottie Delehanty, Thomas Marshall, Betty Hukka, Laurie MacMillan, and Randy Wyatt. These teachers and instructors carried major responsibilities in implementing the curriculum, their contribution is gratefully acknowledged.

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Other teachers who so willingly assisted in this study include: Sister Colleen Nagle, Sherry Singer, Andrea Townsend, Marlene Nelson, Jan Crandell and Nita Bellamy. Their contributions are genuinely appreciated.

Typing at various stages could not have been accomplished without the assistance of Mildred Arndt and Barbara Powe. To them a special thanks.

Finally, deep appreciation is extended to the Independent Community of the Religious Sisters of Mercy for their challenge and life-giving support, and to my own religious community, the Franciscan Sisters of the Eucharist who by their patience and concern gave me the encouragement to see this project through to completion.

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CHAPTER I

INTRODUCTION

The education of the moderately and severely retarded may be said to have its genesis with the work of Jean Marc Itard (Itard, 1962) and his student, Edouard Seguin (Talbot, 1964) in the early 1800's. Their work was the first well documented attempt at systematically training the moderately and severely retarded in sensory-motor, social and other skills. Unfortunately, this encouraging beginning was stifled as education and training became limited to simple custodial care in many residential institutions throughout the United States during the later part of the nineteenth and early twentieth century. Public apathy and professional misgivings about the effectiveness of training for this population, coupled with a concern in some circles that the retarded were a menace to society, fostered this decline (Lance, 1971).

The current, more positive outlook regarding the efficacy of education for the retarded has been influenced more by the forces of social and political change than by any attempts of educators to encourage the training of the retarded (Sloan, 1963).

The resulting establishment of educational programs for the severely handicapped does reflect a change in public policy and hopefully, public attitudes toward the handicapped. Because this

change occurred due to legislation, litigation and/or court order and not through the ordinary evolutionary process, we are without a meaningful history to draw upon in developing specifications for programs (Meyen and Altman, 1976).

Today, standing foremost among the concerns for educational programs for the moderately and severely retarded is the development of a meaningful, relevant curriculum. The major problems noted by Daly (1966) relating to curriculum development for the retarded include: (1) lack of guiding purpose in education and training; (2) lack of agreement between parents and educators regarding educational objectives; and (3) lack of systematic instructional programs appropriate in scope of educational activities. It is with this last problem, the lack of methodology, that this writer is most concerned.

As there exist differences of opinion on what curricular approach is best (behavioristic task analysis, diagnostic-prescriptive teaching, competency based instruction, individualized programmed instruction, etc.) there also exist different views on what curriculum areas are most important in the education or training program of the moderately and severely retarded student (self-help skills, communication skills, personal-social, perceptual motor/physical education skills, functional academics, sex education, career education, economic usefulness/vocational skills).

A distinction needs to be made between curriculum "approaches" and curriculum "methods" or "techniques." An approach refers to a complete system for instruction and a method or technique refers to a defined procedure aimed at increasing efficiency in some particular

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skill. There may be numerous methods and techniques associated with any one approach (Gearheart and Litton, 1975).

Curriculum Approaches

The following approaches all overlap in some way. None of them are clear-cut individual programs.

Behavioristic Task Analysis

The behavioral approach to instruction is concerned with the analysis of a task, the specific behavioral objectives contained in the task and the direction of a student in reaching the objective. Task analysis refers to the reduction of new learning to the smallest functional component parts. Behavioristic task analysis demands the additional requirement that each component of a task be an observable response.

According to Brown, Bellamy and Sontag (1971) the following are requirements that are basic essentials of behavioristic task analysis:

1. The teacher must specify terminal objectives in behavioristic terms.
2. The teacher must analyze the criterion responses and divide them into a series of less complex responses.
3. The teacher must arrange the responses he decided are necessary for completion of the terminal response into a series.
4. The teacher must teach or verify the existence of the student's ability to perform each response in the series.
5. The teacher must teach the students to perform each response in a series in serial order.

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6. In an attempt to delineate successes and failures, the teacher must record student performance during each teaching phase so that adjustments can be made during the teaching process.

Gold (1975) has presented another view of task analysis, defining it as "All of the activity which results in there being sufficient power for the learner to acquire the task." Power refers to the strategies and procedures the trainer must use in order for the learner to acquire the task.

The three major components of task analysis according to Gold are:

1. Method, which refers to the way in which the task is to be performed.
2. Content, which refers to the steps into which the method is divided. Content is what the learner acquires or is expected to do.
3. Process which refers to the way in which the task is taught. Process task analysis means designing strategies for teaching the content. This has subdivisions:
 - a. Format--refers to the presentation of the content (example: match to sample, oddity i.e. selecting the one that does not belong, backward chaining, etc.)
 - b. Feedback--refers to how the learner knows what is wanted and if he is achieving it.

Task analysis requires that the teacher is constantly reviewing the task as to the above three components and modifying previously made decisions to insure that learning is and does take place.

A strong attempt was made to review programs currently being used in the education of the moderately and severely retarded (see Appendix A). It was found that those utilizing task analysis were most prevalent. Individual as well as school districts were using

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this approach (Allegheny I.S.D., 1976; Cline, 1971; Connor, 1970; Corvallis, 1972; Hart, 1974; Michigan State Project, 1975; Oakland Training Institute, 1972; Packman, 1974; Wisconsin, 1975). As each of the above sources were investigated it was found that each used task analysis in a little different way, that is, some divided a task into minute steps, others divided all tasks into a given number of equal steps. The concept of task analysis was similar but the expression differed.

Diagnostic-Prescriptive Teaching

The goal of clinical or prescriptive teaching is to tailor learning experiences to the unique needs of a particular child. Using all the information gained in the diagnosis a specific teaching program is designed. In clinical teaching, diagnosis does not stop when treatment begins. Continuous diagnosis and treatment become the essence of prescriptive teaching. The complete clinical teaching process can be viewed as a cycle. The phases of the teaching process are: (1) diagnosis, (2) planning, (3) implementation, (4) evaluation, leading to (5) modification of the diagnosis, and then to a new plan, new forms of implementation and a continuing cycle of clinical teaching (Learner, 1971).

The assumption underlying diagnostic-prescriptive teaching is met differently depending on how educators view what it is they assess.

Certain investigators (Bannatyne, 1968; Bateman, 1967a, 1967b; Frostig, 1967; Johnson and Myklebust, 1967; Kirk, McCarthy and Kirk, 1968; McCarthy, 1972) have advocated an ability training approach.

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The primary purpose of diagnosis in this approach is to identify ability strengths and weaknesses in order to prescribe remediation for the abilities themselves. The primary concern is the identification of perceptual and/or psycholinguistic abilities or processes which are presumed to cause inadequate skill development (Ysseldyke and Salvia, 1974).

The task analysis viewpoint (Bijou, 1970; Gold, 1968, Mann, 1971) advocates assessment of academic skill development and instruction tailored to move the child from where he is to where we desire him to be. The emphasis is on component skills and their integration into complex terminal behaviors rather than the training of test identified "processes" that presumably underlie (cause) skill development (Ysseldyke and Salvia, 1974).

No author was found that built his curriculum upon a diagnostic-prescriptive method. Usually this approach will use other programs or parts of programs, selecting what is needed from other methods in an eclectic fashion to meet the needs of a particular student.

Competency-Based Instruction

Competency-based instruction requires that specific behavioral objectives be defined, activities be provided to meet the stated objectives and that a proficiency assessment follow instruction (Gearheart and Litton, 1975).

Upon surveying approaches being utilized, a number of sources were located that did specify objectives for instructions. However, none of these suggested a methodology to be used in accomplishing the

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objective, nor a proficiency assessment following instruction, except for Ingham I.S.D. (1976) that did include an assessment (Adams, 1975; D'Eugenio, 1976; ISMRRD, 1976; Oakland I.S.D., 1976; Schirmer, 1974).

Montessori Approach

The Montessori method follows the guidance of the natural physiological and psychological development of the child. It is divided into three parts: (1) motor education, (2) sensory education, and (3) language. If one adheres to a developmentalist viewpoint of retardation, then Montessori's theory of normal mental development would apply equally well to the retarded.

Montessori programs, so identified, are the only ones that use this approach. No program investigated modeled their curriculum exclusively after the Montessori program.

Unit Approach

A unit approach is defined as "an organization of varied learning activities or experiences centered around an interest or interests significant for the child and designed to further developmental learnings or tasks. It ... (is) a series of learning experiences cutting across many subject areas" (Gearheart and Litton, 1975, p. 110).

Molloy (1972) in her book Trainable Children uses the unit approach uniting the physical, emotional, social, intellectual and aesthetic areas in a program of instruction. This was the only source investigated that utilized this approach.

Behavior Modification Approach

The behavior modification approach includes the following minimum conditions: objectives must be specified based on individual pupil behaviors; feedback in some form of reward schedule must be administered contingent upon pupil behavior indicating correct response; discrete steps in the analysis of tasks must be determined and administered with appropriate materials in appropriate settings; and data must be collected upon which to evaluate the child's performance and to plan the next phase of instruction (Anastasiow and Mansergh, 1975).

The behavior modification approach is usually used in conjunction with task analysis (Packman, 1974; Watson, 1969).

Developmental Approach

Development is conceived of "as the transformation of inter-related competencies to pregressively higher levels in accord with some specifiable criteria" (Uzgiris and Hunt, 1975, p. 4). A developmental approach is therefore the process of transformation in which a person interacts with a certain configuration of competencies within a given set of environmental conditions. The ordering of transformations resides neither within the person nor within the environmental conditions separately, but in the back-and-forth transactions between them. Ordered competencies may be derived empirically from normative groups and thus placed into a chronological sequence of states, or they may be derived from an implicative relationship between achievements of adjacent states and placed in order on logical grounds. In sum, the ordering of states may be derived from association with

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chronological age, empirical observation of sequence, or logical implications (Uzgiris and Hunt, 1975).

A number of current programs reviewed use a developmental approach based on either a logical or empirical sequence of competencies. The format of suggested activities is usually employed (Cline, 1974; Portage, 1972).

Guides with no Formal Approach

Numerous curriculum guides are available in which no recognizable approach, methodology or stated objectives can be identified. They may appear with suggested activities for a given area (Bensberg, 1965; Linde, 1973; Scheerenberger, 1969; Virginia, 1973) or an outline format, (North Carolina, 1972) or a descriptive narration of a particular content area with no specific instructional relationship (Fisher, 1975; Gurzburg, 1969; Iowa, no date; Program Panel, 1968).

Please refer to Appendix A for a detailed listing of sources examined and curricular content areas, approaches or methods used.

Statement of the Problem

The author having examined over 30 curricular programs, found that various approaches are used in the education of the moderately and severely retarded with task analysis being the one most frequently identified. However, very few methods of instruction were considered within the various approaches. It is this author's belief that this situation represents a real limitation in programming for the moderately and severely handicapped. Along with a lack of methodology is a lack of consideration for the readiness skills which must precede

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functional academics, i.e. functional reading, writing, math and vocational training. Such readiness skills must include: sensory discrimination (visual, tactual, auditory, gustatory, and olfactory) memory training, classification, hand-eye coordination, spatial relationships, number concepts, concept development and language. These skills must not only be part of the curriculum, but must be sequenced so that one skill finds its base in a preceding skill.

Because a child learns best when he has physical contact with his environment, the materials presented in a readiness skills program must be concrete and able to be examined by one or more of the senses.

Since very few methods of teaching basic concepts have been developed, a strategy is needed which is grounded in the sequence of normal concept acquisition.

A third limitation in programming for the moderately and severely retarded is in the determining of ability level of the student prior to instruction, through the use of a pre-test or assessment to identify his current level of functioning or placement in a properly sequenced program.

These three major areas of deficiency form the basis for this project.

Purpose

The purpose of this study is:

1. To establish a developmental sequence of readiness skills that will prepare students for instruction in functional academics and vocational training.

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2. To develop a means of assessing the student's capabilities and learning modalities in the areas of development proposed in this sequence.
3. To develop a method of teaching basic concepts, i.e., readiness skills, through concrete sensory manipulation of objects in a systematic unit of instruction.

The processes involved in developing these three areas are paramount to this study.

Population

The population for which this study was directed was primarily the moderately and severely retarded student functioning mentally between 18 months and five years. The chronological age varied between three and 25 years. In order to informally compare the applicability of the instructional sequence and methodology with the moderately and severely handicapped and other handicapping conditions, persons diagnosed as severely mentally impaired, moderately mentally impaired, learning disabled and emotionally impaired and normal pre-school children were used in the pilot and field testing of this study.

Limitations of the Study

The limitations of the present study include:

1. The selection of the population. The population ranged in age from three to 25 years, the only requirement being that they function in the pre-operational state of intellectual development.
2. The program was not experimentally tested against another program. This study consists solely in the development of a sequence of skills, a methodology of instruction and a means of assessing the skills introduced, i.e. the process of curriculum development is the major task of this study.
3. Since this program did not undergo experimental research, it is not possible to prove at this time that the program does indeed establish the readiness skills for functional academics.

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Overview of Remaining Chapters

The remaining chapters cover the following areas: Chapter II presents the review of the literature in sensory education and concept development.

Chapter III identifies the eight phases through which this study progressed, and outlines a process that may be used by others seeking to develop an instructional program.

Chapter IV gives in total the curriculum developed by using the process defined in Chapter III. The curriculum includes a manual of instructions, an assessment procedure and 55 instructional lessons.

Chapter V summarizes the study and gives recommendations for further study.

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CHAPTER II

REVIEW OF LITERATURE

Education Through the Senses

Ever since the origin of recorded history the human race has had mentally retarded persons. In the early days little was known of these individuals. History does tell us that the mentally and physically handicapped were not wanted and were destroyed or left to the wild beasts. As we read through history we find that the mentally retarded were regarded as the curse of an evil spirit or a disgrace. They were treated as being different from other human beings and given no consideration. Our early ancestors considered the mentally retarded as incapable of having human feelings. The term "idiot" was derived from the Greek "idiotas" or "idios" which implied a "peculiar individual" hence one to neglect or "get rid of."

From the time of Christ on, there were numerous instances of the recognition of the moral and social responsibility of society for the care of the physically weak, mentally ill and severely mentally retarded.

During the Middle Ages, the mentally retarded frequently earned favor and support of the nobility by providing entertainment as fools or jesters.

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During the later part of the 18th century, special education methods were being successfully applied to the deaf. About this time Jean Marc Itard, a French philosopher and physician working in an institution for the deaf, decided that similar methods of training may have some effect on the education of the feeble-minded. He was inspired by the French post-revolutionary belief that man had unlimited possibilities and that education and environment were the determining factors in mental development.

Itard studied in the field of education for his work with the wild boy of Aveyron as reported in the book by the same title. Dr. Phillip Pinel, a leading psychiatrist, diagnosed the boy as an idiot and said he could not be educated and any attempt as such would be hopeless. Itard worked with him diligently and untiringly for five years, endeavoring to demonstrate to the world the educability of an idiot through the training of the senses.

Victor, the wild boy, had heretofore only very primitive modes of learning, inadequate for knowing how to deal with complex society. Itard sought, through exercise of the senses, to provide Victor with the tools necessary to gain knowledge of his environment. Itard realized not only the need to develop the sensory functions, but also, the corresponding need to develop an awareness of the uses that could be made of the senses.

Our knowledge of Itard's methods comes from reports which he submitted to the French Ministry of the Interior. His first report, published in 1801, summarized the activity of the first nine months during which the boy was brought to appreciate the comforts of

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civilization and learned to conform more or less to its demands. In this period of apprenticeship of the senses, touch, taste and smell were used as softening and civilizing agents (Itard, 1962, pp. 1-51).

The second report submitted in 1806, described the three sequences of activities which comprised the teaching plan. There were: first, the development of the functions of the senses; second, development of the intellectual functions; and third, development of emotional faculties (Itard, 1962, pp. 55-56). Although Itard, applying his philosophical base, worked as if the three areas were sequential, he realized that development in the first two series were simultaneous and reciprocal.

Thus while I confined my efforts to putting into operation the senses of our wild boy, the mind took its share of the care given exclusively to the education of the organs (of sense), and followed the same order of development.... Thus nothing was irrelevant in these exercises; everything reached the mind (Itard, 1962).

Similarly, emotional development kept pace with sensibility and intelligence.

In his training of the separate senses, Itard concentrated first on auditory stimulation, then on visual training. In his second area, imitation of elementary writing processes was a major technique. Third to receive attention was the sense of touch, followed by work on smell and taste (Itard, 1962).

Itard's report of the training of each separate sense included descriptions of exercises increasingly difficult and complex, and requiring finer and finer discriminations. In this use of sense-training, defined as repetition of sensory impressions, Itard broke

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new ground. He evolved his techniques as he worked, retracing steps when he met an impasse and keeping a continuous check on results.

Itard followed a similar system of graduations of exercises in his intellectual training, handling the elements of a situation in preference to its composite.

Itard left us his dynamic thesis that the potentialities of the retarded individual are often measured in terms of the potentiality of his gaining from a method of teaching or treatment. The success or failure of any method of teaching or treating such a person is, to a great extent, dependent upon the knowledge that supports and underlies these endeavors (Itard, 1962).

Itard's sense-training techniques and processes for beginning academic training formed the core of Sequin's classroom work.

Edwin Sequin was another pioneer and leader in the field of training the mentally retarded. In his work he attempted to modify, elaborate and systematize Itard's methods. His theory of educating the mentally retarded was based upon neurophysiological hypothesis. Sequin's system was essentially one of sensorimotor training which was designed to develop imperfect sense organs as both "faculties and functions" and to refine sensitivity. This led to his less explicit notion that such stimulation might develop the process of association, a procedure which should, in turn, lead the child to gain more from his experiences (in themselves sensory experiences). It must be remembered that Sequin's position was developed within the context of the notion of a blocked or damaged nervous system.

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Sequin's philosophical base paralleled the Lockean position which provided our modern world with twin socio-political-psychological forces; it gave Sequin at once the reason for, and the means of, teaching idiotic children. The root of his method was experience: they "shall learn to see nature through itself" (Sequin, 1966, p. 34). The idea that facts handled by the human mind get there by way of the external senses gave Sequin the means of penetrating the isolation of idiocy. In the correlated physiological theory he had a rationale for substituting one sense for another imperious sense. In the social purpose, he had his eventual goal as well as his general procedure: the human being, characterized by his ability to become a social being responds in elemental fashion to social influence (Talbot, 1964). These basic concepts permeated Sequin's method.

Essential and prerequisite to any educational experience was observation of the individual pupil. Malfunctioning and non-functioning organs were noted for later special training. But more important, competent or controlled behavior had to be discovered. The physiological training was a positive method: it builds on existing ability, however low in the scale of development that ability might be.

Training and education begin where previous functions and acquirements ceased. The beginning of the treatment for each child is where his natural progress stood still; so many children, so many beginnings (Sequin, 1966, p. 97).

Side by side with observation of the defective pupil was the continuous observation of ordinary children for clues to the natural

sequence of normal development. Edwin Sequin used as teaching guides the observed normal developmental sequences.

In summary, the theoretical considerations which were Sequin's point of departure in his treatment of idiotic children included:

(1) the physiological structure of the nervous system; (2) the relationship between sensory impressions and spontaneous activity; (3) the orderly and predictable sequence of human development, and the comparable anomalous development in idiotic children, and (4) the susceptibility of human beings to the influence of others (Talbot, 1964).

Teaching techniques derived from the theoretical position were intended to develop in severely defective and inactive children whatever capacities remained for use. Although Sequin aimed at what must be called intangibles, his means were tangible and observable: each motor process and manipulation of physical materials was the material for corresponding intellectual and moral processes (Sequin, 1966). His techniques were: (1) physical training, motor and sensory; (2) intellectual training including academic and speech techniques; and (3) moral training and socialization.

Work done by Sequin was the foundation of our modern work with mentally handicapped individuals. His contributions to educational theory and practice include:

1. Observation of the individual child precedes and is the foundation for the child's education.
2. Education deals with the whole child, the things taught must likewise be kept whole.
3. Activity is the basis for and the means of learning; sensory learning is included in activity.

4. The child learns best and most economically from real things, and he remembers in proportion to his opportunity to compare.
5. Even the most defective child has some spark of understanding upon which learning can be built.

Kirk and Johnson (1972) summarized Sequin's contribution as follows:

He emphasized the education of the whole child, the individualization of instruction, the importance of rapport between teacher and the pupil, the physical comfort of the child during the learning period, and the importance of beginning with what the child needs, wants and desires before progressing to areas that are known [sic], (p. 75).

It remained for Marie Montessori to advance the work of Sequin. The sensory training of Itard and Sequin found a place in the Montessori Method. Such training is intended to provide a sensory awareness and a utilization of the sensory modalities to gain knowledge about the environment. Montessori was concerned with these processes on a neuro-physiological level and through her experiences came to believe that mental development was achieved by the interaction of the individual with his environment. She recognized that the child's ability to note likenesses and differences lies at the base of his ability to form associations and to make judgments. That there be stimulation and contrasts between stimuli, she believed, is not enough, the child must be taught to make judgments based on perceptions of likenesses and differences at increasing levels of difficulty.

The orderly development of concepts was another important concern for Montessori. Standing (1957, pp. 146-147) points out that in the Montessori Method:

The process of abstraction depends on two factors, both of which must be present. The first is that there must be absolute clarity

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in the concrete. And the second is that the child must have reached a certain maturity of mind.... A...danger...is that hustling on the child's mind, and forcing it to do sums in the abstract before it has formed a clear notion of the operation in the concrete...The child's mind--in order to rise into the abstract--needs first to move with the solid and concrete.

It is a characteristic of the Montessori approach that the child must meet the demands of one level before being allowed to proceed to a higher level (Montessori, 1912).

Alice Descoeudres further developed some aspects of Montessori's work. Her distinct contributions were her further applications of the sensory and physical training approaches as advocated by Montessori.

In special classes we are not dealing only with inattentive children. We find also, in a much larger proportion than in ordinary classes, those who are deficient in sight, in hearing, in the sense of touch, and in the muscular sense.

In some the sense organ is itself diseased, while in others it is the perceptive power that is lacking, owing to mental deficiency. Experiments have shown that if the sensory power itself cannot be developed by exercise, the power of perception can, by way of compensation, be educated and improved.

No line can be drawn between sense exercises and attention exercises, for they are really the same thing. To encourage the senses to recognize resemblances and differences of increasing slightness... is to perfect the intellect, whose judgments will be sounder in proportion to the precision of the elements on which they are based. If it is possible... to measure a man's sensory acuteness and multiply it by his power of attention, we should get nearer than by any other method to a determination of his intelligence (Descoeudres, 1928, p. 71).

Among her other accomplishments, she developed what was called the "object lesson" for subnormal children (Descoeudres, 1928). These object lessons are credited with being forerunners of the "units of experience" which are familiar in curricula for the educable retarded.

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Concept Formation

The physical and social world is made up of a number of diverse stimuli. Sounds, lights, textures, smells, tastes and shapes are among the innumerable sources of stimulation constantly bombarding man's senses. For adults diversity is neither distressing nor chaotic for they have learned to create order from these. One major reason people function so efficiently is that they have developed a system of concepts which "serve as an experimental filter through which impinging events are screened, gauged and evaluated, a process which determines in large part what responses can and will occur" (Harvey, Hunt and Schroder, 1961, pp. 2-3).

Concepts are learned through a complex set of processes, but it must be kept in mind that the learning processes involved are embedded in a complex system which must include the social cultural context interacting with the fundamental nature of the organism (Siegel, 1975, p. 67).

Concepts serve as crucial links between the total environment and the individual. They serve as tools which man uses to organize and thereby adapt to his world.

A concept functions as an organizer of the diverse stimuli which bombard an individual every moment. The concept is an expression of a rule by which the diversity is brought together and thereby reduced. In this way, ambiguity is reduced and efficiency enhanced. Application of the concept means that there does not have to be relearning everytime one encounters a member of that class (Siegel, 1975, p. 67).

The complex set of processes in concept acquisition have a specific order (Inhelder and Piaget, 1964). The child first has to learn to identify an object and distinguish it from other objects.

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The child has to learn that objects exist independently of himself, ie., they have permanence and differ from one another. While he is learning about the differences between objects, he is also perceiving their similarities. This dual learning of sameness and differences is a critical aspect of concept acquisition.

The next step in the process is identification of objects through appropriate use of naming. With language the child learns how to label objects. In learning how to identify objects he learns about the whole object and its multiple characteristics, the commonalities within diversity.

This complex set of learnings involves: discrimination, perception, memory, transposition, generalization and language. According to White (1963) discrimination learning is a primary step toward concept acquisition. How children perceive what information they get from their environment and the kinds of stimuli they attend to is constantly in need of further study. Transposition, the ability of children to respond to new stimuli with responses learned under a different set of conceptions is important to the acquisition of concepts (White, 1963).

Intrinsic to all these is the fact that the individual remembers the objects, the contexts in which he interacts with them, and their various attributes. Memory is not a simple matter, but rather has its own developmental course which is related to the general cognitive status of the child (Olson, 1973; Piaget and Inhelder, 1973). Thus the developmental changes move from a failure to organize, plan, monitor and integrate information to a capability of recalling rules by which to organize information.

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All these processes start at the beginning of life and the vast array of recent research has shown that the complex processes of discrimination, recognition and organization of stimuli begin the first months of life (Bower, 1966; Fagan, 1971; Gratch and Landers, 1971). The processes involved and the knowledge acquired will depend on the match between the demands of the learning situation and the developmental status of the individual (Hunt, 1961).

...the individual through complex learning and memory processes data from the environment. Stimulation is reciprocal: Experiences stimulate the person and the various experiences eventually become organized into schemata employing his ability to discriminate and to generalize from the concrete perceptual environment. Instead of being influenced primarily by what he sees, he is now able to impose his own organization on the environment (Sigel, 1975, p. 70).

Theories of Development/Other View Points

The concept of development is important to our understanding of concept acquisition. Does development always follow the same general pattern or is it rather based on the accumulation of experiences? An individual's view will influence the kind of teaching or program he will employ.

Therefore, a basic question needs to be asked. Does development always follow the same general pattern, i.e. does it proceed in a sequential, invariant order? A number of noted persons hold that it does, (Kohlberg, 1971; Langer, 1969). Others, however, maintain that development is primarily the accumulation of more experience without invoking the concept of stages (Bijou, 1968; Rohwer, Ammon and Cramer, 1974). Sigel, (1975) distinguishes these two groups as those propounding the stage dependent theory or the stage nondependent theory.

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Stage dependent theories maintain that for the child to arrive at stage B in his development, he must first have reached and passed through Stage A. The order is fixed; stage B cannot be arrived at until Stage A has been mastered (Flavell, 1970, 1971).

Those assuming a fixed order also accept the position that the age at which stages appear and the length of the stages will vary as a function of hereditary potential and experience (Tanner and Inhelder, 1960). Studies with the mentally retarded indicate that the order of the stages is present, but appears at different chronological periods and that the rate of change varies from that of a normal child (Woodward, 1961). Thus ages and stages are not necessarily linked although in normal situations correspondence is generally found (Sigel, 1975).

There are others who believe that stages as invariant sequences do not hold, but rather that the child is a product of learning experiences, showing different levels of ability, knowledge, and skills as a function of such experience. Order of development is not invariant; instead, the rate and quality of change depend on the particular kinds of experiences (Bijou, 1968; Gagne, 1968; Wohlwill, 1973).

Bruner holds the major opposing view to Piaget on this subject. Although there are crucial differences in the approach and theory of the two men, the similarities are more fundamental. For both, cognitive development involves qualitative rather than quantitative changes in the cognitive structures presumed to mediate behavior at different ages. At a general level both view the total process of

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growth as comprising three major epochs. For Piaget these are the sensorimotor period, the period of preparation for and organization of concrete operations, and the period of formal operations; for Bruner, enactive representation, iconic representation and symbolic representation (Bruner, Goodnow, Austin, 1956). Both have been struck by the importance of action in infancy and both view growth in childhood as carrying the individual from a state of being dominated by immediacy and appearance to a state in which he is able to transcend the present and perceptual, to appreciate connectedness over time and invariance in the face of surface change (Bruner, 1968).

As well as the general similarities that link these approaches, there are also important differences. Piaget's theory of intellectual development is saturated with reference to mathematics and logic. Bruner's is fundamentally psychological [i.e. Bruner attempts to identify the psychological processes which occur during cognitive development and the forces which impel it (Bruner, Goodnow, Austin, 1956)]; Piaget represents the knowledge of the child in the various stages of his development formally in terms of mathematical and logical symbols and operations.

Another real difference between Bruner and Piaget concerns the question of whether the changes that do occur in the child's problem solving skills at around six or seven years of age are mediated by language. Bruner demonstrates a correlation between the child's performance and the language he used in describing his reasons for that performance. Piaget argues that the linguistic correlates of success in these various tasks are correlates only, that they are

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symptoms of the achievement of concrete operations, but in no way are they linked to the young child's increased competence.

Perhaps the most critical difference in the work of the two men concerns the power attributed to agents of culture in shaping structures in the course of intellectual development. Compared with Bruner's account, Piaget's description of the course of development seems relatively fixed and prefigured. Not that Piaget's theory is a wholly hereditary account. His central concept of accommodation certainly implies that the environment does bring about changes in cognitive structure. Moreover, the idea that teaching should start "where the learner is" which has been so crucial to Bruner's views in education, is implicit in Piaget's work. Nonetheless, in most of his work, Piaget seems little concerned with the pedagogical means of aiding intellectual development. Generally he has presented his analysis of the unfolding stages in conceptual development without a corresponding analysis of possible accelerating educational techniques. In contrast, Bruner, who believes that a theory of development should go hand in hand with a theory of instruction, has argued that

mental growth is in very considerable measure dependent upon growth from the outside in--a mastering of techniques that are embodied in the culture and that are passed on in a contingent dialogue by agents of culture (Bruner, Goodnow, Austin, 1956).

In line with this belief he has continually tried to design pedagogical means for accelerating intellectual achievements.

Bruner, however, has not spelled out his developmental position in the same theoretical elaborateness as Piaget nor has he presented the same amount of empirical data as basis for his point of view.

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The research on concept development has grown so large that no small chapter can fully cover it. There are several sources that are recommended for a lengthy review of the subject. Piaget has written good summaries of his own work (Piaget, 1970; Piaget and Inhelder, 1963, 1966). Other surveys include Baldwin (1967), Elkind and Flavell (1969), Flavell (1963a, 1963b), Hunt (1961, 1963), Inhelder (1962), Lovell (1962), Lunzer (1959, 1960), Sigel (1964), Sigel and Hooper (1968), Wallace (1965), Wallach (1963), and Wohlwill (1962, 1963, 1966). There have been two published conferences (Kessen and Kuhlman, 1962; Ripple and Rockcastle, 1964). Sigel (1964), Russell (1956), Vinacke (1952) and Werner (1948) describe non-Piagetian research on concept development.

See Flavell (1970) and Sigel (1975) for a review of concept development in the areas of seriation, classification, numbers, quantity, conservation, space, time, movement, velocity, and causality.

While varying viewpoints do create consternation, there is no immediate solution. The increasing state of knowledge and awareness of the complexity of man in his bio-environment result in such diversity. As researchers begin to evolve larger and more discriminating perspectives and deepen their knowledge of the basics, they will arrive at new periods of integration and differentiation.

Concept Development According to Piaget

Piaget has outlined concept development most succinctly. In the common view, the external world is entirely separate from the subject's (child's) own body. Any objective knowledge appears to be simply the result of a set of perceptive recordings, motor associations

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or verbal descriptions which participate in producing a sort of copy of objects and the connections between them. The only function of intelligence is systematically to file, correct, etc., these various sets of information. In such a view the content of intelligence comes from outside, and the coordinations that organize it are only the consequences of language and symbolic instrument.

But this passive interpretation of the act of knowledge is in fact contradicted at all levels of development and, particularly, at the sensorimotor and pre-linguistic levels of cognitive adaptation and intelligence. Actually, in order to know subjects, the child must act upon them, and therefore transform them: he must displace, connect, combine, take apart and re-assemble them.

From the most elementary sensorimotor actions (such as pushing and pulling) to the most sophisticated intellectual operations, which are interiorized actions, carried out mentally (e.g. joining together, putting in order, putting into one-to-one correspondence) knowledge is constantly linked with actions or operations (transformations).

Hence the limit between child and objects is in no way determined beforehand, and, what is more important, it is not stable. Knowledge, at its origin, neither arises from objects nor from the child, but from the interactions--at first inextricable--between the child and those objects.

This leads to the second area central to Piaget's theory--namely that of construction which is the natural consequence of the interactions just mentioned. Since objective knowledge is not acquired by a mere recording of external information but has its

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origin in interactions between the child and objects, it necessarily implies two types of activity--on the one hand, the coordination relations between the objects. These two activities are interdependent because it is only through action that these relations originate. It follows that objective knowledge is always subordinate to certain structures of action. But those structures are the result of a construction and are not given in the objects, since they are dependent on action, nor in the child, since the child must learn how to coordinate his actions.

The fundamental psychogenetic connections generated in the course of development consist of assimilations both in the biological and intellectual sense.

From the biological point of view, assimilation is the integration of external elements into evolving or completed structures of an organism. If assimilation alone were involved in development, there would be no variations in the child's structures. Therefore, he would not acquire new content and would not develop further. Assimilation is necessary in that it assures the continuity of structures and the integration of new elements to these structures.

Assimilation itself is never present without its counterpart, accommodation. Accommodation is any modification of an assimilatory scheme or structure by the elements it assimilates.

Cognitive adaptation consists of an equilibrium between assimilation and accommodation. There is no assimilation without accommodation and accommodation does not exist without simultaneous assimilation.

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If accommodation and assimilation are present in all activity, their ratio may vary and only the more or less stable equilibrium which may exist between them characterizes a complete act of intelligence.

We have seen that there exist structures which belong only to the subject (transformations), that they are built (construction), and that this is a step-by-step process (assimilation, accommodation). We must therefore conclude there exist stages of development.

If we consider only the principle periods of development, one can enumerate three of them:

- a. A sensorimotor period lasts until approximately $1\frac{1}{2}$ years of age with a first subperiod of centration on the subjects' own body (lasting about 7 to 9 months) followed by a second one of objectivization and spatialization of the schemes of practical intelligence.
- b. A period of representative intelligence leads to concrete operations (classes, relations, and numbers bound to objects) with a first pre-operational subperiod (there is no reversibility or conservation, but the beginnings of directional functions and qualitative identities), which begins around $1\frac{1}{2}$ to 2 years of age with the formation of semiotic processes such as language and mental imagery. This is followed by a second subperiod (at about 7 to 8 years) characterized by the beginnings of operational groupings in their various concrete forms and with their various types of conversation.
- c. Finally, there is the period of propositional or formal operations. This also begins with a subperiod of organization (11 to 13 years old) and is followed by a subperiod of achievement of the general combinatory and the group INRC of the two kinds of reversibilities (Piaget, 1970, p. 711).

Piaget's theory is a stage dependent one in which the child is said to move in an invariant order through major stages and substages, each denoting the necessary operations required. That is, the child moves from sensory motor intelligence, ages 0 to 2 years; to pre-

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operational thought, ages 2 to 7; then into the concrete operations, ages 7 to 11; and finally, at ages 11 to 15 into the period of formal operations.

Piaget's stage criteria are by no means accepted by all developmental psychologists. As stated above Bruner (1970), in particular, diverged from Piagetian hierarchies and stressed opportunity-capacity as the dimension of importance. Piaget has said little concerning education and the optimum patterning of experience for learning. Since optimum learning is of primary importance to the lives of the mentally retarded, the impact of Piaget on this field may be more by example, derivation, and inspiration than by direct application (Moss and Mayer, 1975).

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CHAPTER III

METHOD OF DEVELOPMENT

The conceptualization, development and implementation of this study flowed from the author's involvement with moderately and severely mentally impaired children and the observation of the lack of proper instructional programs available to them. Initiated in the spring of 1975, the study was conducted in eight phases, each with a series of subphases.

Phase I

Phase I consisted of a search for approaches currently available for moderately and severely mentally impaired students. This was accomplished by writing to State Departments of Education and School Systems as well as scouring publication lists of book publishers to ascertain programs currently in use. From these sources was determined the need for further programming for this population (see Chapter I). At this time the objectives for this study were defined. (It should be noted that the search for programs began as the initial step in this program, but the search continued throughout the course of the study.)

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Phase II

Phase II consisted of an extensive review of the literature pertaining to sensory education and concept development. This was seen as a missing element in the programs examined. From this review was formed the cognitive basis and approach for the sequence and skills introduced in the instructional program (see Chapter II).

With this as a background Phase III was initiated.

Phase III

Phase III consisted of developing the sequence of skills, the method of instruction and the assessment procedure to be used for student placement in the instructional program. Following is a detailed description of this phase.

Process of Skill Selection and Sequencing

Since this study was concerned with the readiness skills that precede formal academics, the first step was to study the demands of the preoperational stage of mental development as defined and outlined by Piaget. What is the sequence of learning found in this stage? How are the concepts developed? What motor, visual, auditory skills are developing to give the basis for the intellectual skills? What processes are used to make the bridge between concrete objects and abstract representations?

The second step was to generate a list of skills through a review of the literature, observation of programs, and through the experience of this author that pertained to this stage of mental development that appeared to form the basis for future academics or

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abstract thought. Since man learns everything he knows through his senses, all sense areas needed consideration. A criterion for the selection of skills was established. (1) Skills were identified that were best taught through the manipulation of concrete objects, pictures or symbols. (2) Each skill had to enhance development in one of the five basic sense areas. (3) The skills were those believed to establish readiness for formal academics (reading, math, writing, manipulation). (4) All skills were based in the preoperational stage of mental development. (5) All skills developed a basic concrete concept.

Following the selection of skills, time was spent developing a process of moving from concrete to abstract learning. This movement is illustrated by the sequence found in Figure 1.

Each selected skill was then placed in a category of concrete, representational or abstract. If a skill used a concrete object, i.e., a shoe, a spoon, a block, etc., it was placed in the concrete category. If a skill used a representational material, i.e. pictures, concrete symbols, etc., it was placed in the representational category. If a skill used abstract material i.e. picture of a symbol, a word, an abstract picture, etc., it was placed in the abstract category.

Each selected skill was then placed sequentially in it's category. The number of skills in each category was arbitrary. As the selection process proceeded it was found that the three categories overlapped in difficulty, i.e., a skill using concrete materials may be more difficult than a skill falling early in the representational category. An expansion of the categories of concrete and

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



- a concrete object		(i.e. a red rubber ball)
- a similar concrete object		(a blue rubber ball)
- a photograph of the concrete object (first stage of representational)		(a photograph of the red rubber ball)
- a picture of the concrete object (representational)		(a drawn picture of the red rubber ball)
- a picture of similar objects (representational)		(football, basketball, handball)
- a semi-abstract picture of the object (first stage of abstraction)		(a circle representing a ball)
- a word used for the object	BALL	(the word BALL)
- a partial word for the object (abstract)	-ALL	(word with missing letters)

Figure 1.--Movement from Concrete to Abstract Learning.

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representational was introduced. Due to the expanding nature of this study it was necessary to limit its scope; therefore the category of abstract objects was deleted. In order to handle the overlapping mentioned above new categories were created as seen in Figure 2: basic skill development, attention training and classification. It was felt that the three new terms better described the process of movement from concrete to representational as far as the type of skill needed by the student to accomplish the task. The progression in difficulty remained the same.

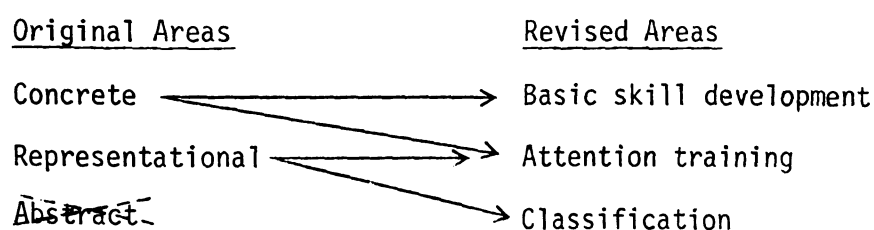


Figure 2.--Revised Areas.

The three new divisions were described as follows:

Basic skill development.--This section of skills developed the awareness of basic characteristics of objects, such as shape, color, size, quantity, taste, touch, smell and sound.

Attention training.--This section increased the ability to discriminate previously learned polar characteristics by introducing a medial characteristic, i.e. after a student has learned the concepts big and small, the concept of middle size is introduced. Emphasis is placed on attending to important characteristics of an object.

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Classification.--This section concentrated on recognizing important characteristics of an object and finding similar or contrasting characteristics in other objects. This also includes ordering, grouping, classifying, concept labeling.

It should be noted that the original order of skills, as seen in Appendix B, was based entirely on the amount of abstraction that was demanded by the skill. Discrimination involving the five senses--sight, hearing, touch, taste, smell was introduced early in the sequence. No previously existing scales were consulted for corroboration. To re-state the organization--the five sense areas were identified and the progression of skills evolved from that.

Methodology and Instruction

Since the listing of skills in isolation have no particular meaning, a method of instructing children in the skill or concept areas proposed was developed.

When one looks at those persons who have used a sensory approach in the education of retarded children we find their goal as one to assist the child in his task of creating order and sequence in sensory input by presenting a carefully constructed sequence of experiences that proceed very slowly from the concrete to the abstract.

Contrasts are always presented first, then identities are established through matching, and finally gradation of quality are presented for finer discrimination. The idea of always presenting two contrasting stimuli rather than a single one was initiated by Sequin. He also developed the "three-period lesson" to associate an object or a quality with its name. The first period consisted of

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establishing identity, associating the sense perception with its name. The second period tested the child's recognition of the object corresponding to the name. And the third period was a verification phase in that the child recalled the name corresponding to the object.

Upon studying Sequin, it was noted that there was a similarity between his approach and the work of Wallas (1926), a similarity in which this author was interested.

Wallas in his book The Art of Thought discussed the natural thought process and dwelt at great length on the stages of thought-process. He identified the stages as being four in number: (1) Preparation--the stage during which a problem is investigated in all directions; (2) Incubation--the stage during which one does not consciously think about the problem; (3) Illumination--consists of the appearance of insight; (4) Verification--the stage in which the validity of the idea itself is reduced to exact form. In the daily stream of thought these four different stages constantly overlap each other as different problems are explored.

When looking back at Sequin's Three-period lesson, we find a subtle relationship between it and the stages of thought processes as defined by Wallas. After seriously studying this relationship, this author attempted to combine the two concepts and develop them to include the process of concept development as a methodological approach to teaching. Therefore, the approach presented here has been developed from Sequin and Wallas.

Exploration--This is the stage in which investigation takes place. Students are given the materials that will be used in the

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lesson to explore as they choose. They are encouraged to use as many senses as possible in its exploration and manipulation. The advantage is that the level of activity shown will be appropriate to the child since he is the initiator of the activity. No demands are placed on the child to do any particular thing with the object. While the student is exploring the object the teacher is to note the student's pattern of functioning. Can he perform a meaningful activity without specific direction? Does he show skills already acquired that will not have to be formally taught? What is his level of response?

Identity.--This is the stage of receptivity. After the materials have been explored and manipulated by the student, the teacher identifies the object. Time is spent with the student handling the object as the teacher says the name, and encourages the student to repeat. This phase is the process of naming, identifying or placing parameters on an object, action or task by the teacher.

Recognition.--This is the stage in which concepts, ideas presented are shown to take shape and having meaning. This phase has been divided into two parts, both are seen as necessary stages in recognition: matching and finding.

Matching.--After the object, task or action is identified, the student is asked to find one just like the one presented. The ability to match is the very first step in the discrimination sequence.

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Finding.--Following the ability to match identical or similar objects, the student is moved to the phase demanding receptive language. The teacher says the name of the object present, "Where is the _____?" and the student responds by finding the requested object. This phase is the process of demanding a cognitive response from the student through locating a particular named object. This is the period of insight.

Recall.--This is the last phase in the instructional sequence. After the student has responded to the object receptively, he is called upon to "name" the object. "What is this?" This phase is the process of producing a response from some prior experience through naming. Naming may take place vocally or through action, signs or symbols. Meaning is present and from this base, generalizations and transpositions can take place.

Shown briefly, the method of instruction for teaching basic concepts as derived from Sequin and Wallas is:

<u>Sequin</u>	<u>Wallas</u>	<u>Cline</u>
	I. Preparation	I. Exploration
I. Identity	II. Incubation	II. Identity
II. Recognition	III. Illumination	III. Recognition
		A. Matching
		B. Finding
III. Recall	IV. Verification	IV. Recall

Figure 3.--Comparison of Sequin, Wallas and Cline's Methods of Instruction.

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Therefore the method of instruction developed by this author is based on Sequin's "Three-period lesson," Wallas' process of thought development as well as the complexities involved in concept development. Each of the skills listed in the instructional sequence was presented using the above method of instruction.

Lesson Format

The lessons all followed a similar format; based on the method of instruction discussed above. Each lesson began with the statement of objective followed by a listing of materials needed for the activity. The procedures to be followed were stated specifically in a planned sequence with suggested verbal input. The lessons were followed as stated except where the terms "variation" or "alteration" occurred. Variation referred to an adaptation of the lesson to accommodate those students who could perform the task at a higher level of competence. Alteration was an adaptation of the lesson to accommodate those students who needed the task presented in an easier or less involved way than generally presented. Supplemental suggestions for independent work to reinforce the concept taught was provided at the end of each lesson. The complete instructional program can be found in Chapter IV.

Assessment Format and Procedures

Because standardized tests were not available to evaluate the particular skills proposed here, an assessment device was developed to assess the attainment of skills as well as to determine student placement in the program. Therefore, after the skill areas had been

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chosen and placed in a sequence of normal intellectual development, a means of assessing the presence of a skill or concept in a particular student was proposed following the sequential scale of skills utilized in the instructional program.

The assessment was devised by looking at the "finding" and "recall" areas in each lesson in the instructional program and developing a means prior to instruction of determining the presence of those skills in the student. For example in Lesson 5, the student was to find and label six pictures of common objects. To determine whether the student could do this without being formally instructed the following assessment was provided:

a. Place six pictures of common objects before the student (cup, glass, comb, brush, shoe, sock). Ask the student to "Show me the picture of the cup." The student responds by pointing to the picture. This item is passed if the student is able to recognize correctly each of the six pictures.

b. Place the six pictures before the student. Point to each picture and say, "What is this?" This item is passed if the student is able to name all six pictures.

If a student passed both areas of the assessment he need not be taught this skill since he already knows it. If, however, a student missed a part or all of the assessment item, this was then a clue to the teacher that he must be formally instructed in that area.

As stated above, the assessment was to be administered prior to placement in the program and was to be an aid in determining the deficient skill areas of a particular student. The assessment

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was to be administered individually. The criteria for passing a particular item was stated in the assessment procedure. The assessment used identical or comparable materials to the instructional guide and focused primarily on the areas of receptive and expressive language since these two areas are the goals for each lesson.

Each assessment item followed a similar format. A statement identifying the skill area was given followed by a behavioral objective. Identification and arrangement of materials was listed. Actual wording to be used when administering the assessment was suggested along with the criterion for passing the item. A check list was used to keep an account of items passed, along with space for comments that will aid in future instructional planning.

As a student reached areas in which he could no longer perform the task, the assessment would end and the instruction would be planned. For an example of the complete assessment see Chapter IV.

Phase IV

Phase IV consisted of meeting with five Special Education Directors in Oakland County to determine their willingness for their school districts to be involved in the pilot testing and further refinement of the project. After discussing the ramifications of participation only one Director was able to give the project the needed support. In this district a program for severely and moderately retarded students was located at Hawthorne Learning Center. There were four classrooms for the moderately impaired ranging in age from three to 14 years and six classrooms for the severely mentally impaired students ranging in age from three to 25 years.

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The investigator met with the six teachers whose students met the criteria for the program, to present the rationale and objectives of the assessment, the curriculum training, and the proposed implementation. Interest was expressed and agreement to participate was obtained.

The Inservice for participating staff consisted of two, two-hour meetings, held in January 1976. During these meetings the rationale and research for sensory education was given along with the process of movement in the instructional program from concrete to representational to abstract learning. Examples of materials and procedures were used to reinforce understanding. An explanation of readiness skills was given. A rationale was included as to the particular selection of skills and their place in the sequence. The assessment was discussed along with its purpose and use. An opportunity was given for each staff member to "practice" administering the assessment and recording the results.

At this point an honest response from the teachers was encouraged by the investigator indicating their desire for involvement in the study. All six teachers and six instructional aides wished to take part in the pilot study.

Phase V

Phase V consisted of a pilot study run at Hawthorne Learning Center. This began late January 1976 and continued until June 1976. Four trainable and two severely mentally impaired classes, consisting of 50 students, used and critiqued the assessment.

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Following the initial inservice, meetings were held approximately every two weeks to discuss advances, findings, questions and concerns. Student response was also recorded. A response sheet was given to each staff member to indicate difficulties that arose during the assessment times. In Appendix C is an example of the feedback sheet used by the staff. Questions concerning procedures, materials, methodology and sequence were indicated. This formed the basis for future revision. See Appendix E for example of the feedback sheet in use.

Phase VI

Phase VI emphasized a critique of the materials by the teachers and revision of the materials by the author. This phase was concluded by September 1976.

Marked changes needed to be made in the sequence arrangement of skills. Using the discrimination demanded by each of the five senses as the basis for progression did not prove to be developmentally correct. Previously, all sense areas of sight, touch, taste, smell, and sound were introduced at the two year level. The physical mechanism of the majority of children is developed enough at two years of age for gross discrimination of sight and sound. However, the finesse of touch, taste, and smell does not develop to the comparable level of sight and sound until around four plus years of age. Therefore, the entire sequence of development had to be reconsidered.

To assist in developing a revised sequence of skills, moving from the concrete to the abstract, incorporating the five senses,

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Hausserman (1958) had set forth a scale depicting the sequential development of a child as he moves from sensori-motor to and through the preconceptual stage. Appropriate test tasks are listed for each of six mental age intervals between two and six years. These include memory, discrimination, spatial orientation, amount concepts, relationships and language.

Those skill areas that were similar to Hausserman's were compared for appropriate placement on the developmental continuum. Other sources consulted to determine appropriateness of placement included: Gessel, (1940); Cole, (1971); and the Portage Project, (1970). Areas not corroborated by the five given sources were determined by this author.

In the re-assignment of skill areas, the three divisions of basic concept development, attention training and classification were eliminated, and all skills were placed on one total continuum with no divisions. Six new skills areas were added to the sequence while three were deleted. Appendix D gives the revision of the sequence and corroboration.

Phase VII

Phase VII consisted of identifying additional teachers and classes to be used in the project, and training the teachers in the use of the revised assessment and instructional methodology. Two additional classes of severely mentally impaired students along with classes for the emotionally impaired, two for the learning disabled,

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and one normal preschool class were included. The six teachers and instructors who were originally involved in the pilot study remained. This phase was the field study proper and was initiated September 1976 and ran until March 1977.

The inservice consisted of the same points as had been covered when instructing the pilot study group in Phase IV. In addition to the material covered there, instruction was given in the instructional procedures to be used and variations to expect.

A complete set of materials needed to implement the lessons was delivered to each classroom (some of the teachers did make some of the items). The teachers involved in the severely and moderately impaired classrooms all worked with instructional aids. In fact, the instructors took over the major responsibility in two trainable classes. All instructors were trained by their teachers except in the two trainable classrooms where teacher participation was negligible. In those two classrooms the instructors attended the training sessions with the other teachers.

During the training sessions, lessons soon to be presented were previewed. Demonstrations were included. The sessions also provided an opportunity for the teachers and instructors to describe the reactions to previous lessons and student response.

Phase VIII

Phase VIII, the final phase of the project involved incorporating the field recommendations and other changes into the final draft copy. In this revision changes were made based on teachers' feedback.

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Sequence

There were seven changes made in sequencing:

- 1-1 correspondence was moved up in the sequence.
- Nesting according to size was changed from five objects to three objects retaining the same place in the sequence.
- The concept of one and more than one was moved up in the sequence.
- Spatial relationships--assembling a circle, square and triangle was changed to include only the circle and square. An additional lesson was included later in the sequence to include the triangle.
- Recognition of similar objects in pictures was moved up in the sequence.
- Recognition of graded sizes with a graduated peg board was omitted entirely from the sequence due to the inability to obtain the materials.
- Matching of multiple textures was omitted since the same concept was covered in a previous lesson.

Procedure

There were minor procedural changes:

- a statement was included at the beginning of the assessment indicating that any material could be used for a given lesson if it did not violate the concept being taught. The materials listed were only suggestions.
- more emphasis was given to accepting gestural responses from multiply handicapped students and not necessarily the spoken word.
- some variation of materials was suggested e.g. in sorting grossly different objects, nuts, bolts and washers were added for use with older students.
- in some places the assessment did not correspond exactly to the instructional lesson, this was changed so that the two were consistent in both materials and difficult of concept.
- sweet and salty were added as optional concepts in taste discrimination.

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- some assessment areas were expanded to include more than one response for a given concept, so that the possibility of chance responses would be better eliminated.
- in #52 recognition of objects that do not belong, the assessment portion was limited to two areas, food and toys, and the areas of animals, clothing and people were deleted.

In Appendix F is a sample of one teacher's responses as given on the feedback sheet. Each teacher submitted one or more such sheets. From these all changes were made.

Student Errors

Along with teacher feedback a graph was made of student responses to better determine errors in sequencing in areas in which modification needed to be made. Fifty moderately retarded students ranging in age from four to 14 were randomly selected and their response errors graphed. Figure 4 shows the results of the study. The A axis indicates the assessment number, the B axis is the number out of 50 who did not pass the item.

From this information the following changes or modifications were made.

- #6 nesting according to size was modified to include three objects rather than five.
- #14 spatial relationships--assembling a two-pieced circle, square and triangle was modified to include only the circle and square.
- #15 1-1 correspondence was moved up on the sequence and became #5.
- #19 concept of one, more than one was moved up in the sequence to #15.
- #22 concept of light and heavy was moved back in the sequence to #27.

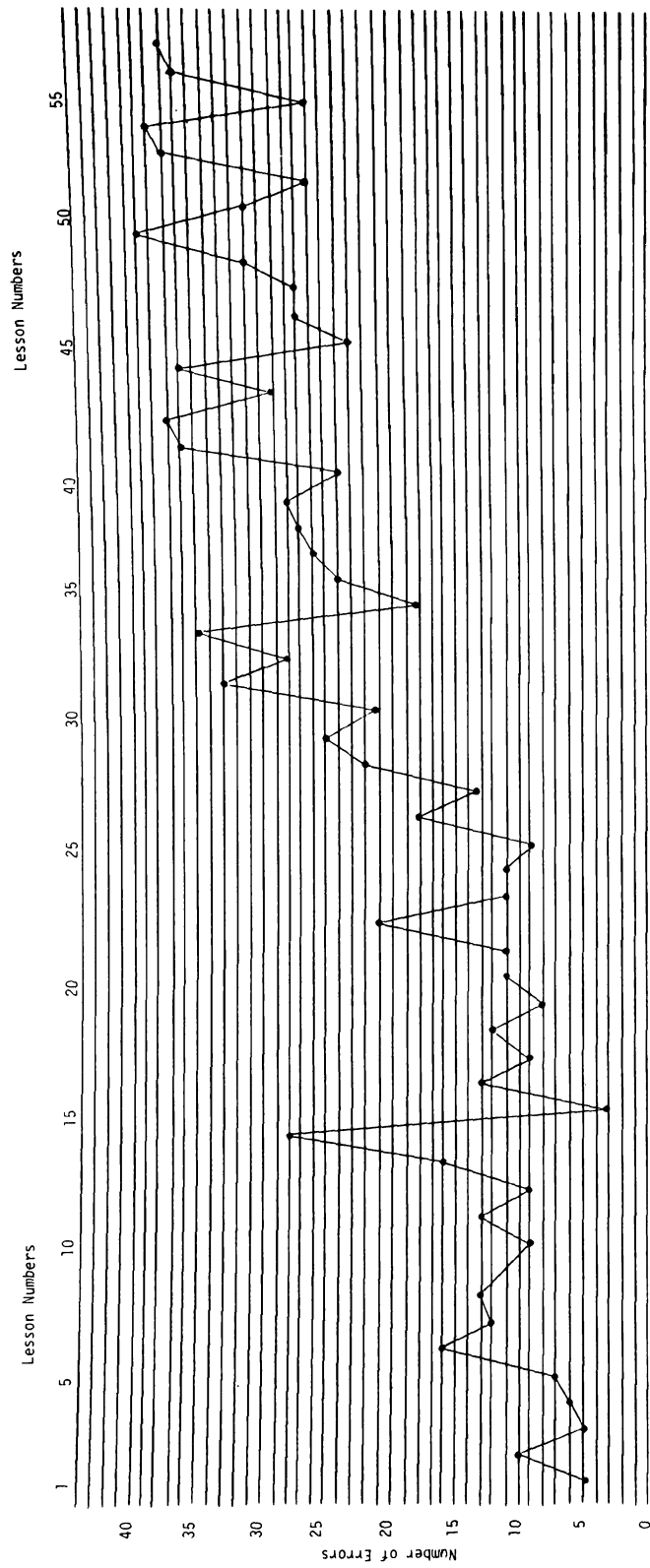


Figure 4.--Errors in Response to Assessment.

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- #31 was modified to use sweet and salty, rather than sweet and sour.
- #33 introduction to tactilemat pegboard was modified in the designs used.
- #34 recognition of similar objects in pictures was moved up in the sequence to #29.
- #41 the concept and term middle was replaced by middle-sized.
- #42 tinker toy construction--the designs used were modified and made more simple.
- #49 sequencing according to a pattern, the patterns were modified.
- #52 recognition of objects that do not belong--three items were removed from the item: animals, clothing and people.

From the compilation of teacher feedback and student responses the final revision of this program was made. Chapter IV contains the entire program along with the manual of instructions.

This product concluded the eighth phase of the study.

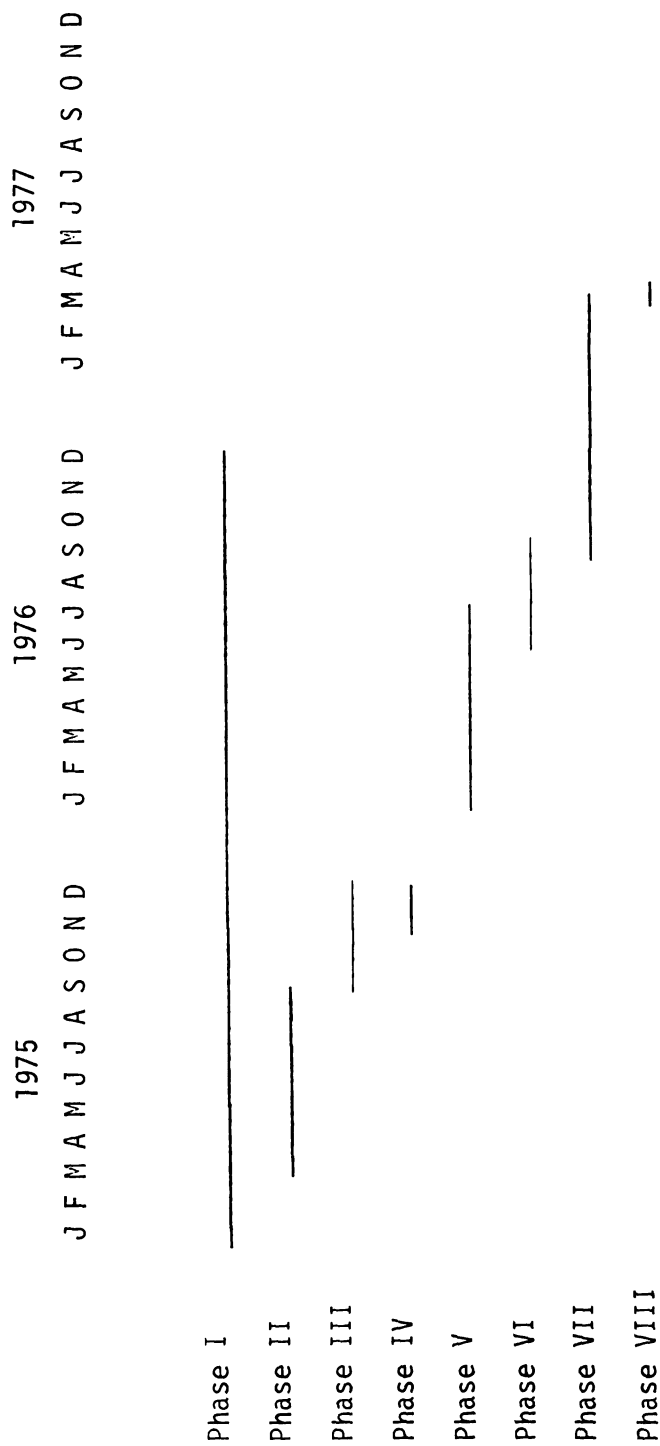


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CHAPTER IV

PRE-ACADEMIC SKILLS: AN INSTRUCTIONAL PROGRAM

Manual of Instructions

This manual is designed to be used as a guide in evaluating and instructing the educational potential of moderately and severely mentally impaired students.

While no formal preparation is needed to carry out the assessment or training procedures contained here, experience in working with the severely and moderately handicapped is advisable. It is important that any teacher/instructor become thoroughly familiar with the underlying approach to the presentation, the materials being used and with the sequence of the lessons.

Because the procedures for teaching the lessons are well described, there may be a tendency for teachers to devote insufficient time in preparing to teach the various activities or preparing the necessary materials. Thoughtful daily preparation on how to approach the lesson with each individual student will increase student progress. Providing for individual differences of the students in the program will contribute to its effectiveness.

Not only the teachers of the moderately and severely impaired students should be effective in the use of this program, but also

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other Special Education teachers, speech and language developmentalists and pre-school teachers. Able community volunteers and supportive personnel, working with experienced teachers should also demonstrate their ability to present the lessons effectively.

The program is composed of two parts. These parts include:

1. An assessment program composed of 55 items which determine placement in the instructional program. Each assessment item consists of a stated objective, a list of needed materials and their arrangement, the format of presentation for the teacher, a statement of criteria to determine if a student passed the item and a checklist to keep a record of student responses.

2. An instructional program composed of 55 lessons which aid in the attainment of readiness skills preceding functional academics. Each lesson is composed of four parts: the instructional objective, the materials needed, the instructional procedure and additional supplemental activities.

Purpose

Pre-Academic Skills (PAS) is designed for those persons functioning between the mental ages of two and five years, regardless of their chronological age, and persons who need a systematic presentation of concepts in order to profit from the instructional process. More specifically it is intended for:

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2. Moderately mentally impaired primary and intermediate students
3. Mildly mentally impaired primary students

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4. Normal preschool children from disadvantaged homes or communities.

Knowledgeable teachers should be able to modify the lessons to make them useful in teaching hearing impaired or deaf children as well as for children for whom English is a second language.

Rationale

This program is designed primarily to teach readiness skills preceding functional academics. This includes basic concepts and receptive and expressive language. Figure 6 outlines the processes of learning involved in the lessons.

RECEPTIVE (Input)	LEARNING SKILLS	EXPRESSION (Output)
Auditory	Identification/Recognition	
Visual	Discrimination/Differentiation	Vocal
Tactual	Memory	
Gustatory	Spatial Orientation	Motor
Olfactory		

Figure 6.--Processes of Learning.

In P.A.S. reception is provided through the five sense modalities of sight, hearing, touch, taste and smell; expression is provided through the vocal and motor channels. However, the lessons are concentrated on the cognitive processes involving identification, discrimination, memory and spatial orientation.

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Lessons are sequenced so that simple beginning skills are introduced first, gradually leading the way to more difficult skills.

Each of the lessons are divided into four parts: exploration, identity, recognition and recall. Recognition demands receptive language, recall demands expressive language.

Directions for Administering the Assessment

The assessment procedure is designed to evaluate the students present level of achievement and his standing in the sequenced program. It provides an opportunity to watch the student manipulate materials in a controlled situation. With this kind of an assessment the teacher can set her immediate training goals and develop the appropriate program for each student.

This is an educational evaluation and not a standardized test. The focus here is on careful observation and response, rather than score; achievement capacity rather than failure. During the assessment the teacher should be aware of how a student arrived at a solution and how a student's behavior would serve to facilitate or impede learning. This assessment is not directed toward determining how one student's performance compares to that of another student.

Who may be assessed?--This assessment is intended for any student who is functioning between two and five years or at a pre-school level, and for whom an educational plan is being formulated.

When to administer the assessment.--The time of administration will vary with circumstances. The assessment will need to be given

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over a period of a few sessions unless the student is unable to perform a number of the items. As soon as a student fails three consecutive items the assessment should terminate and the instructional program begin. The assessment should be arranged for the time of day when the student is most alert.

Preparation for the assessment.--Preparation of the materials will facilitate smooth and rapid conduct of the assessment. The area should be as free as possible of distractions. The table should be completely free of materials, except those being used at the moment in any item. Materials to be used should be readily accessible, but out of the student's reach and in such a spot that he will not look at them or reach for them. In most cases it will be easier to administer the items if the teacher sits at the table directly opposite the student.

The form on which the teacher records the responses is the actual assessment form. It is important to use the manual and recording form as unobtrusively as possible, in order to avoid distracting the student. A "+" should be placed next to each item performed, a "-" indicates an inability to perform the item. Additional observations of the student's behavior during the assessment should also be noted.

The assessment.--Provide a receptive environment for the student. Begin by talking informally with him about areas of interest to him. Have the materials ready, in sequence, and out of the student's view. It will keep the student interested if he does not

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have to sit at an empty table and wait idly before and between items. Remove the materials from the table quickly after they have been used.

During the assessment judge whether the student could have succeeded on the item by accident. If he missed an item determine whether it was because of distractibility or inability to comprehend. After the completion of each item, give a positive response such as "good for you" or "good boy" to indicate to the student you appreciate his effort. During the assessment, failure is in no way indicated to the student.

Implications for the assessment.--No age norms are given.

The labeling of a student is not necessary for his educational program. Although no age norms are given, a developmental framework is suggested. The range of the 55 items corresponds to expectations for children two to five years. The items are presented in a broad developmental sequence, roughly parallel to stages of educational growth.

After ascertaining the student's level of skill development, the teacher can better locate his placement in the accompanying instructional program. The real teacher will create many techniques that are effective for each student with his profile of skills and deficits.

Directions for Teaching The Lessons

As noted above, each lesson procedure is specifically stated in four parts. The duration of each lesson (i.e. the time allotted per day per student) is dependent upon the ability and attending

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behavior of each student. No time limit is stated as to how long it will take a student to progress through the four steps of each lesson. It may take only one day for one student and a week or more for another. It is recommended, however, that the lessons be taught in sequence, beginning where a student began to fail the assessment. The teacher should require the students to apply the concepts developed by the program. In summary, to facilitate lasting effects, the lessons should be taught sequentially and the concepts developed reinforced throughout the school day.

The basic philosophy behind the program is that the development of concepts and the oral and motor expression of them should be an integral part of each day. Thus the setting created for learning is as important as the specific materials present, therefore:

1. The teacher should make each lesson enjoyable. It is important that the period be viewed as a time when spontaneity and talk are allowed. It is important that the teacher be enthusiastic, energetic and supportive.
2. The teacher should reward the participation of each student. Even minimal performance should be reinforced with praise. Refrain from criticizing the student. If a student fails to live up to the teacher's expectations, it is the responsibility of the teacher to modify the lesson.
3. The teacher should stress over-learning. After a student has successfully performed, it is extremely important that he have an opportunity to repeat it successfully a number of times. Practice,

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drill and review are to be encouraged as long as the activities are varied to sustain a high level of interest.

The sequence of each lesson.--Each lesson is presented in four parts. The first step is EXPLORATION in which the student is given the opportunity to explore and manipulate the materials to be used in the lesson. Manipulation will require that he use his senses of hearing, seeing, touching, tasting and smelling. Characteristics of color, size, texture, odor, taste, and form are observed. It is important that the teacher is aware of what the student does with the materials, for this will influence the way the rest of the lesson will be presented. For example, if a student matches the materials according to color independently and the lesson is sorting objects according to color, there is obviously a portion of that lesson the student already knows so it will not have to be formally taught.

The second part of each lesson is IDENTITY. This is that portion of the lesson in which the teacher actually instructs. The teacher uses his/her creativity to impart the concept to the student. This may be done in a variety of ways. For example--introducing the object to the student, saying its name, having the student repeat the name, adding a second or polar object, following the same procedure as before, finding objects with similar characteristics from a group on the table, locating similar characteristics from a group on the table, locating similar characteristics in objects within the classroom, matching objects, finding objects upon request, responding with the name of the object. When matching, finding and naming are done in this part of the lesson it is under teacher direction and

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assistance. The student does not necessarily have to respond correctly without prompting. This portion is teacher directed.

The third part is RECOGNITION and is composed of two subdivisions: matching and finding. After the teacher has taught the concept or activity during the identity stage of the lesson, it is now time to examine whether the student understood or learned the concept. Here minimal assistance is given by the teacher. If a student has any difficulty with any part of the lesson from here on the teacher must go back to the identity stage.

In matching, the student is required to identify objects that are the same, similar or opposite of the objects presented. No expressive language is required.

In finding, the student is required to locate the object named by the teacher. This may be done by pointing to the object, or picking the object up and placing it in the designated tray. Again, no expressive language is required other than locating an object.

The fourth part of the lesson is RECALL. This is the stage when the student must name the object presented by the teacher. Expressive language is demanded vocally or by sign. The teacher asks, "What is this?" The student responds by giving the name. At this time the student should be encouraged to generalize the knowledge to other materials in the room that possess the same characteristics.

The lessons are planned for individual or small group instruction i.e. three to four students or less. Initial lessons may begin with ten minutes and increase to 20 minutes as the students become

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more comfortable working. The small group period should be arranged for regular times during the day so that the student can look forward to his special time with the teacher.

The materials used for the lessons were selected because of their ability to be manipulated. Any child or adult functioning between two and five years needs the concreteness of materials to handle and explore. Only when a student has had the opportunity to work with concrete materials will he become prepared for abstract presentations.

Therefore, the materials used are mostly objects. A few pictures are introduced to help students recognize that pictures are flat representations of objects. In the lessons, objects are presented first and only later are the pictures for those objects introduced.

In each lesson the objective of the lesson is listed first. The objective tells what the student is expected to do in the lesson. Following this are listed the materials needed to carry out the objective. In the procedure section, detailed descriptions are given for each of the four steps. In some lessons the terms "variations" and/or "alternatives" are given. Whenever an alternative is given it supplies the teacher with a procedure to make that step easier for the student, i.e. instead of having to discriminate between five objects he may be given an alternative to discriminate between two or three objects and gradually build his ability to handle all five objects.

When variations are presented, the lesson is made a little more difficult. In order to keep interest high for some students they

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may need a more "sophisticated" way of working with the objects.

Following the four step procedure for each lesson, is listed additional activities a teacher may engage in to further strengthen the concept. It is hoped that as teachers find other ways of broadening the concept they make notations of the activities in their own instructional manual.

Suggestions for presenting the lesson.--

1. The lessons should be presented in the given sequence. If some lessons are omitted important small steps may be missed.
2. It is important that the teacher be prepared for each lesson. Before beginning a lesson be sure to read the entire lesson. You will more readily understand the progression of the lesson.
3. The sentences in quotation marks are given only as an example of what you may want to say. Use them only as they fit your natural way of speaking with your students.
4. You may enhance a concept by presenting stories, poems, film strips or records which describe the areas covered.
5. After completing ten lessons it may be well to present the assessment covering those ten items to each student and check if the concept was really learned and remembered. If possible, a person, other than the person teaching the lesson should present the re-assessment.
6. It is important to emphasize language development. Before concepts can be spoken they must be known and experienced. Besides

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vocal language, sign language and language boards are encouraged for those with vocal deficits.

The assessment procedures and lessons presented here have been used by teachers of moderately and severely mentally impaired as well as teachers of the learning disabled, emotionally impaired and normal preschool children.

Comments and suggestions made by the teachers who used the lessons have been considered in the final plans. Changes were made in sequencing, materials and procedures.

The series of lessons is designed to develop readiness skills preceding functional academics. It is recognized by this author that there are many more skills that could have been included. At a future time this beginning program will be enlarged to include other skills felt to be important in readying students for formal academics.

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Pre-Academic Skills Assessment

A variety of objects may be used to assess a concept. The concept is the important thing, not the objects. Therefore, any variation in materials is acceptable, if the underlying concept remains unchanged.

1. Recognition of common objects

UPON REQUEST A STUDENT WILL FIND AND CALL BY NAME SIX COMMON OBJECTS.

Place six common objects in front of the student (shoe, glass, comb, sock, cup, brush)

- a. The teacher says, "Give me the ____." The student places the correct object in the designated tray. Whatever object the student places in the tray, the teacher responds with "Good." No indication is to be made as to the correctness or error of the choice. After the student places the object, the teacher returns it to the line and proceeds with the next object.

This item is passed if the student responds correctly with each object.

- b. The teacher points to an object and asks, "What is this?" The student responds with the appropriate word, sign or gesture. (If a student is unable to say or sign the word, the teacher may point to each object saying, "Is this a cup?" The student responds by nodding yes or no. Throughout the assessment this procedure may be used for severely handicapped students.

This item is passed if the student is able to express the name of the object.

2. Recognition of common objects according to function

UPON REQUEST A STUDENT WILL BE ABLE TO IDENTIFY AND NAME THE FUNCTION OF SIX COMMON OBJECTS.

Place in front of the student six common objects (glass, ball, shoe, spoon, comb, car)

- a. The teacher says, "Give me the one we ____ (eat with, use in our hair, drink from, throw, wear)." The student

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places the designated object in the tray. The teacher responds "Good" or some appropriate response. The object is then placed back in the row.

This item is passed if the student places five out of six objects correctly in the tray.

- b. The teacher points to an object and says, "What do we do with this?" The student responds with the function of the object.

This item is passed if the student is able to name or gesture the function of the object.

3. Recognition of body parts on self and doll

UPON REQUEST A STUDENT WILL LOCATE AND NAME ON HIMSELF HIS EYES, EARS, NOSE, MOUTH, HANDS, FEET AND STOMACH.

- a. The student is asked to find his eyes, ears, nose, mouth, hands, feet and stomach. He passes this item if he can locate the requested body parts.
- b. The teacher points to the student's eyes, ears, nose, mouth, hands, feet and stomach. The student passes this item if he can name the body part pointed to.

4. Discrimination of sound-making objects (clicker, bell)

UPON REQUEST A STUDENT WILL IDENTIFY AN OBJECT ACCORDING TO THE SOUND IT MAKES.

Place two noise-making objects before the student, let him have a chance to view them. Cover them with a screen. Make a sound with one of them. Uncover the objects and say, "Find the one that made that noise." Follow the same procedure with the second object.

This item is passed if the student is able to locate the correct sound-making object.

5. Amount concept--1-1 correspondence

UPON REQUEST A STUDENT WILL SHOW A 1-1 CORRESPONDENCE BETWEEN TWO SETS OF OBJECTS.

Place five (5) dogs before the student. Ask the student to "give each dog one bone." This item is passed if the student places one bone near each dog showing that each dog gets only one bone.

6. Recognition of pictures of objects

UPON REQUEST A STUDENT WILL RECOGNIZE A PICTURE OF A FAMILIAR OBJECT.

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- a. Place six pictures of common objects before the student (cup, glass, comb, brush, shoe, sock). Ask the student to "Show me the picture of the cup." The student responds by pointing to the picture. This item is passed if the student is able to recognize correctly each of the six pictures.
- b. Place the six pictures before the student. Point to each picture and say "What is this?" This item is passed if the student is able to name or gesture all six pictures.

7. Nesting according to size

UPON REQUEST A STUDENT WILL NEST, ACCORDING TO SIZE, THREE OBJECTS.

Place before the student three boxes (cans) varying in size and say, "Place these in each other." "Start with the big one and go to the little one." The student is to nest the objects according to size.

This item is passed if a student is able to place all three parts in one another according to size.

8. Recognition of objects in pictures according to function.

UPON REQUEST A STUDENT WILL NAME THE OBJECT IN A PICTURE AND THE FUNCTION IT PERFORMS.

- a. Place five pictures before the student (fork, soap, pencil, hammer, knife). The teacher says, "Find the one we write with" (eat with, wash with, pound with, cut with). The student finds the picture that performs that function.
- b. The teacher places one card at a time before the student saying, "This is a fork. What do we do with a fork?" The student responds by naming the function--either verbally or through signs.

9. Recognition of shape (circle, square and triangle)

UPON REQUEST A STUDENT WILL FIND AND NAME A CIRCLE, SQUARE AND TRIANGLE.

Place a circle, square and triangle before the student.

- a. The teacher says, "Find the circle." The student points to the appropriate shape. Continue with the rest of the shapes. This item is passed if the student correctly finds each shape.
- b. The teacher points to a shape and says, "What is this?" The student responds with the appropriate name. Continue with the rest of the shapes. This item is passed if the student responds with the correct name or close approximation.

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10. Recognition of size (big, little) (large, small) all characteristics constant except for size.

UPON REQUEST A STUDENT WILL DISCRIMINATE A LARGE OBJECT FROM A SMALL OBJECT AND LABEL THE OBJECT WITH THE APPROPRIATE NAME.

- a. The teacher says, "find the large spoon," "...the small spoon." A student passes this item if he places, in the designated tray, the appropriate spoon.
- b. The teacher picks up one spoon and says "What spoon is this?" A student passes this item if he is able to respond with the size of the spoon or some gesture indicating that he knows the size.

11. Prepositional directions (one, under, in)

UPON REQUEST A STUDENT WILL ILLUSTRATE THE LOCATIONS OF ON, UNDER, AND IN.

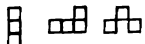
Place a box before the student and a small toy. Say to him, "Put the toy in the box." "Put the toy under the box." "Put the toy on the table." The student will respond by placing the toy where requested.

This item is passed if the student is able to locate the requested positions.

12. Sorting grossly different objects (cubes, animals and pegs), nuts, bolts, washers)

UPON REQUEST A STUDENT WILL SORT OBJECTS THAT DIFFER IN SHAPE.

Place before the student 12 objects--(four cubes, four animals, and four pegs). Place before him three trays, one with a cube in it, one with an animal in it and one with a peg in it. The teacher says to the student, "Put each of these objects in the box with another object like it." The student is to place each object in the appropriate box. This item is passed if the student correctly sorts all 12 objects. (Make a note if he can sort correctly one set of objects, but not the other two sets.)

13. Copy block design from a structure. 

UPON REQUEST A STUDENT WILL BE ABLE TO COPY THREE BLOCK DESIGNS (THE TOWER OF THREE, THE TRAIN AND THE BRIDGE.)

The teacher builds the tower of three blocks. The blocks are given to the student, saying, "Make one like this." The student looks at the structure and makes one like it.

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The teacher makes a train, then gives some blocks to the student saying, "Make one like this." The student makes a train or a close approximation.

The teacher makes a bridge, gives the blocks to the student and says, "Make one like this." The student makes a bridge. Encourage any effort the student may make.

These items are passed if the student is able to copy or closely approximate the structure presented.

14. Recognition of action in pictures

UPON REQUEST A STUDENT WILL IDENTIFY COMMON ACTIONS IN FIVE PICTURES

Present the student with five pictures saying, "What is the boy/girl doing in this picture?" The student names the actions. (Actions to be included are: eating, running, sweeping, washing, and sleeping.)

This item is passed if the student correctly names the action the picture portrays.

15. Spatial relationships

UPON REQUEST A STUDENT WILL BE ABLE TO ASSEMBLE A TWO PIECED CIRCLE AND SQUARE.

Place one half of the circle and square before the student. Give him the other half of each piece saying, "Find one like this, put it together." This item is passed if the student correctly assembles the two objects.

16. Concept of one (one, more than one)

UPON REQUEST A STUDENT WILL PLACE IN THE APPROPRIATE TRAY ONE OBJECT FROM A GROUP OF MORE THAN ONE.

Place a group of six objects before the student. Say, "Put one _____ here" (point to the tray). This item is passed if a student places one item in the tray and stops (i.e. does not make a move to pick up another item.)

17. Recognition of size of shape

UPON REQUEST A STUDENT WILL BE ABLE TO DISCRIMINATE A LARGE CIRCLE FROM A SMALL CIRCLE, A LARGE SQUARE FROM A SMALL SQUARE, AND A LARGE TRIANGLE FROM A SMALL TRIANGLE.

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Place six forms before the student (one large circle, square and triangle, and one small circle, square and triangle). Tell the student to find the big square and place it on the tray. After the response is made say "Good" and return it to the table and ask for the next form. Continue until all forms and sizes are identified. This item is passed if the student responds with the correct form each time it is requested.

18. Recognition of clothing

UPON REQUEST A STUDENT WILL BE ABLE TO FIND AND NAME COMMON ARTICLES OF CLOTHING.

Place eight pictures of common clothing before the student (shoes, socks, pants, shirt, dress, coat, hat, boots.)

- a. Give the student time to look at the pictures. Then say, "Find the shirt." The student points to the picture of the shirt. Continue like this until all of the pictures are identified. This item is passed if the student is able to find each picture as it is requested.
- b. With the cards before the student, point to each picture and ask, "What is this?" The student responds with it's name. This item is passed if the student is able to give the name, or give a close approximation.

19. Recognition of food

UPON REQUEST A STUDENT WILL BE ABLE TO FIND AND NAME EIGHT COMMON FOODS.

Place the eight food cards before the student (milk, bread, apple, orange, meat, potato, beans, corn).

- a. Give the student time to look at the cards, then say, "Find the apple." Student is to point to the requested card. Continue in the same way until the student has found all the cards. This item is passed when a student correctly finds all the cards.
- b. Present the cards to the student one at a time and say, "What is this?" Student responds with the name or a close approximation. This item is passed when a student can name all cards.

20. Recognition of colors--red, blue, green, yellow

UPON REQUEST A STUDENT WILL FIND AND LABEL FOUR BASIC COLORS.

Place four cubes (red, blue, green, yellow) in front of the student.

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- a. Ask the student to "Find the red block." Student is to pick up the block and place it on the tray. Teacher responds "Good." The block is returned to the group. This item is passed if the student selects the requested block and places it on the tray. Any error in color recognition will demand training in that area.
- b. The teacher points to a block and says, "What color is this?" To pass this item the student must say the color name or a close approximation.

21. Sorting according to form (color constant, form varies)

UPON REQUEST A STUDENT WILL BE ABLE TO SORT OBJECTS ACCORDING TO FORM.

Place before the student a box with circles and squares. Place one circle or one square in each of two empty trays. Say to the student, "Put the circles and the squares in the right tray." The student sorts the objects according to their form.

This item is passed if a student is able to sort circles and squares into right tray.

22. Amount concept--two

UPON REQUEST A STUDENT WILL IDENTIFY AND NAME TWO OBJECTS.

Place a tray before the student with one object on it and another tray with two objects.

- a. The teacher says, "Find the tray that has two ____." The student points to the appropriate tray. Make sure the student has made a definite choice before saying, "Good." Continue with one. This item is passed if the student can identify one and two objects correctly.
- b. The teacher points to one of the two trays and says, "How many are here?" The student responds with correct numeral. Continue with the second tray. This item is passed if the student is able to say the appropriate numeral or make a close approximation.

23. Sorting color (form constant, color varies)

UPON REQUEST A STUDENT WILL BE ABLE TO SORT AT LEAST 30 SMALL OBJECTS ACCORDING TO COLOR IN FIVE COLORS.

Place before the student a tray with at least 30 objects in it. Also place before the student five empty trays. Place one object of each color in each of the five trays and say, "Put all of

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these (beads) in the boxes where they go." The student then sorts the objects according to color. (Use those colors that are most familiar to the student.

This item is passed if the student is able to sort all 30 objects according to color.

24. Recognition of parquetry shapes

UPON REQUEST A STUDENT WILL MATCH UNFAMILIAR SHAPES WITH THEIR OUTLINED FORM (see p. 82 for outlined patterns).

Present the student with four outlined shapes. Give him a set of shapes to match and say, "Find one like this." The student is to place the form on its outline.

This item is passed if the student correctly matches all four shapes.

25. Spatial relationships (pictures in two and three pieces)

UPON REQUEST A STUDENT WILL ASSEMBLE A PICTURE OF A PERSON AND A TOY CUT IN TWO AND THREE PIECES. (Two pictures of a person, two of a toy.)

a. Place before the student a picture of a toy cut in two pieces and say, "Put this together to make a _____." Present him with two pieces of a person saying, "Put this together to make a _____." The student is to complete the picture after each instruction.

b. Then present the student with a picture of a toy cut in three pieces. Say to him, "Put these together to make a _____." Continue the same way with the person.

26. Recall of missing objects from memory

UPON REQUEST A STUDENT WILL BE ABLE TO IDENTIFY AN OBJECT THAT HAS BEEN REMOVED FROM A GROUP OF OBJECTS, UNSEEN.

Place three known objects from No. 1 before the student. Tell him to look at the objects. Cover the objects from his sight. Remove one object. Show him the remaining objects and ask, "Which one is missing?" This item is passed if the student is able to identify the missing object three out of three times.

27. Recognition of weight (light, heavy)

UPON REQUEST A STUDENT WILL RECOGNIZE AND NAME THE WEIGHTS OF LIGHT AND HEAVY.

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- a. Give the student two bags--one light, one heavy--say to him, "Give me the heavy bag"... "the light bag." Student responds with the correct weight. This item is passed if student responds with the correct weight.
- b. Give the student two bags, one heavy, one light. Point to one of them and say, "Is this heavy or light?" This item is passed if the student responds with the correct name.

28. Discrimination/Recognition of size (long, short)

UPON REQUEST A STUDENT WILL BE ABLE TO MATCH AND NAME OBJECTS WITH THE CHARACTERISTICS OF LONG AND SHORT.

Place two sticks in front of the student, one stick at least eight inches long, the other four inches long.

- a. Teacher presents the student with another long stick saying, "Find one like this." The same is done with the short stick. A student passes this item if he correctly matches both sticks.
- b. The teacher points to the long stick and asks, "Is this a long stick or a short stick?" The same procedure is used for the short stick. This item is passed if a student is able to correctly identify the size of the stick given the two alternatives.

29. Recognition of similar objects in pictures (different kinds of glasses, etc.)

UPON REQUEST A STUDENT WILL BE ABLE TO MATCH AND NAME OBJECTS THAT BELONG TO THE SAME CLASS.

Place before the student a picture of a house, a tree and a chair.

- a. Present to the student pictures that are different, but are a house, a tree and a chair. The student is to match the pictures that belong to the same group.

This item is passed if a student can match two different houses, two different trees, and two different chairs.

- b. Point to the picture of the house and say, "What is this?" Point to the second picture of the house and say, "What is this?" The student is to respond with the appropriate name or close approximation or sign. Continue with the other two pictures in the same way.

This item is passed if a student can correctly name each of the presented pictures and know that each one is a picture of a house, a tree, or a chair.

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30. Discrimination/Recognition of texture (rough, smooth)

UPON REQUEST A STUDENT WILL MATCH AND NAME OBJECTS WITH THE CHARACTERISTICS OF ROUGHNESS AND SMOOTHNESS.

Place two texture cards in front of the student, one rough and the other smooth. To insure recognition of texture and not some visual characteristic of the texture cards, blindfold the student for this exercise, or use a screen.

- a. Teacher presents a second card to the student and says, "Find one that feels like this." This item is passed if the student correctly matches the textures.
- b. The teacher presents the blindfolded student with one texture card and asks, "Is this rough or smooth?" This item is passed if the student is able to identify, from the two given options, the correct texture.

31. Amount concept of three

UPON REQUEST A STUDENT WILL IDENTIFY THE AMOUNT OF ONE, TWO AND THREE.

Place before the student three objects. Say to him, "Give me one _____." The student places in the appropriate tray one object. Continue requesting two and three objects. Always return to the table the objects the student placed in the tray. Encourage the student with each response he makes.

This item is passed if the student can correctly count out one, two and three objects when requested to do so.

32. Discrimination of taste (sweet, sour); (sweet, salty)

A STUDENT WILL BE ABLE TO DISCRIMINATE BETWEEN SWEET AND SOUR TASTES.

Place two containers before the student. One container containing white syrup, the other containing white vinegar. Have the student taste (dip a tooth pick in) the syrup and ask, "Is that sweet or sour?" Do the same with the vinegar. This item is passed if the student is able to correctly label the taste of each, given two alternatives.

Salt and sugar may be used as an alternative.

33. Discrimination of smell

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Give the student three bottles to smell (Vicks, rosewater, cloves). Present him with a fourth bottle and say, "Find one that smells like this." The student matches the two bottles that smell the same. Follow the same procedure with the other two bottles. This item is passed if the student is able to correctly match the three odors presented. Any three distinct odors may be used here.

34. Spatial Relationships

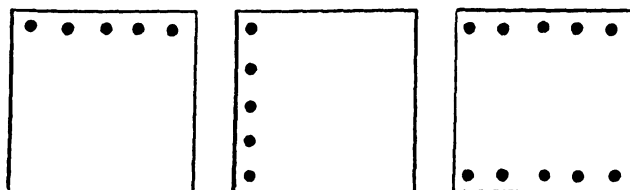
UPON REQUEST A STUDENT WILL BE ABLE TO ASSEMBLE A TWO PIECED CIRCLE, SQUARE, AND TRIANGLE

Place one half of the circle, square and triangle before the student. Give him the other half of each piece saying, "Find one like this, put it together." This item is passed if the student correctly assembles the three objects.

35. Introduction to tactilemat pegboard

UPON REQUEST A STUDENT WILL BE ABLE TO COPY A PEGBOARD DESIGN.

Place before the student a pegboard with 10 pegs. Place also before him a board completed by the teacher and say, "Make your board look like this." This item is passed if the student is able to correctly locate the pegs according to three designs.



36. Recall of missing picture from memory

UPON REQUEST A STUDENT WILL RECALL A MISSING PICTURE FROM MEMORY

Place before a student four pictures (a flower, an animal, an article of clothing and an article of furniture). Identify the pictures with the student.

The teacher covers the pictures and removes one of them. The student is then requested to look at the pictures and identify the one that is missing. Continue with three more trials. Rearrange the pictures each time one is removed.

This item is passed if a student correctly identifies the missing picture.

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37. Recognition of parts of objects (wheel from a car, button from a coat, etc.)

UPON REQUEST A STUDENT WILL IDENTIFY PARTS OF A WHOLE WHEN PRESENTED IN ISOLATION.

Place before a student a button, a toy wheel, a pen cap, a jar lid and a shoe string.

Also place before the student a small coat, a toy car, a pen, a jar and a shoe.

Point to one object at a time and say, "What does this go with?" The student places the part next to the whole that it came from.

This item is passed if each part is placed with the correct item that it came from.

38. Recognition of difference

UPON REQUEST A STUDENT WILL BE ABLE TO DISCRIMINATE FROM A GROUP OF IDENTICAL OBJECTS THE ONE THAT IS DIFFERENT.

Place before the student three red cubes and one yellow cube. Say to him, "Find the one that is different." The student points to the one cube that is different. Place three green Teddy bears and one green cube before the student. "Find the one that is different." Place three beads and one Teddy bear before the student. "Find the one that is different."

This item is passed if a student is able to find the one object that is different, in each of the three sets presented.

39. Recall of missing shape from memory

UPON REQUEST A STUDENT WILL RECALL FROM MEMORY A MISSING SHAPE FROM A GIVEN SET.

Place a large and small circle, square and triangle before the student. Allow time to look at the shapes. Cover the shapes with a board, remove one of the shapes. Ask the student which shape is missing. Student responds with the missing shape.

This item is passed if the student is able to recall from memory the missing shapes in three out of three trials.

40. Separating a stated number of objects from a group (milk bottles)

UPON REQUEST A STUDENT WILL BE ABLE TO SEPARATE FROM A GROUP ONE, TWO, THREE AND FOUR OBJECTS.

Place the container with six milk bottles (Fisher-Price) before the student. Say to him, "Give me two bottles of milk, please." The student gives two bottles to the teacher. Continue requesting one, three and four bottles. Always return the bottles back to the case each time to maintain a total number of six to choose from.

This item is passed if the student is able to select from the group of six the designated number of bottles.

41. Recognition of size (large, big, middle size, small)

UPON REQUEST A STUDENT WILL BE ABLE TO FIND AND NAME OBJECTS THAT DIFFER IN SIZE

Place three blocks, all differing in size, before the student.

- a. The teacher asks, "Find the large block." The student places the appropriate block in the tray. Teacher responds with "Good" even if the response is incorrect. Continue with the other two sizes.

This item is passed if the student correctly selects the block when requested.

- b. The teacher points to the small block and says, "What size is this?" The student responds with the size. Continue until he has identified all three sizes.

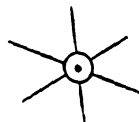
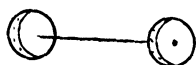
This item is passed if the student correctly names the block size, or makes a close approximation.

42. Simple construction (tinker toys)

UPON REQUEST A STUDENT WILL BE ABLE TO CONSTRUCT FROM TINKER TOYS A SIMPLE CONSTRUCTION.

- a. As the student is watching, put together a stick and two knobs. Then give the student the appropriate materials and say, "You make one like this." The student then attempts to copy the structure made by the teacher.
- b. As the student is watching, place six sticks into the knob of the tinker toy. Give the student the appropriate material and say, "You make one like this." The student then copies the pattern.

This item is passed if the student is able to correctly copy the two structures made by the teacher.



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43. Recognizing missing parts from pictures

UPON REQUEST A STUDENT WILL BE ABLE TO RECOGNIZE THE MISSING PART FROM PICTURES.

Place a picture of a dog before the student. Give him a chance to look at the picture, then ask, "What part is missing?" or "What is missing?" The student points to the missing part and says the word (if a student does not have expressive language, pointing to the missing part is sufficient).

This item is passed if a student is able to locate and name the missing part in five pictures.

44. Matching texture by touch alone.

UPON REQUEST A STUDENT WILL BE ABLE TO MATCH THE TEXTURES OF THREE TEXTURE CARDS BY TOUCH ALONE.

Give the student three texture cards to explore, eyes are open. Blindfold the student and present him with one texture card at a time and ask him to find the one that feels like it. The student is to group the textures that are identical.

This item is passed if a student can correctly match all three textures.

45. Lotto

UPON REQUEST A STUDENT WILL BE ABLE TO MATCH PICTURES IN A LOTTO GAME.

Place a lotto card before the student. Hold up one card at a time and say, "Find this picture." The student takes the picture and places it on the appropriate place on the lotto card. Continue until all of the pictures are matched.

This item is passed if the student can match all of the pictures. Passing this item does not mean the student may skip the training lesson for this item. If he passes he is ready to play the social game of lotto.

46. Discrimination of sound matching sound blocks

UPON REQUEST A STUDENT WILL BE ABLE TO MATCH FIVE SOUND BOXES

Place five sound boxes before the student. Allow student to shake each box. Present him with five more, one at a time. Tell him to "Find one that sounds just like this."

This item is passed if student correctly matches four boxes.

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47. Recognition of things that go together (sock, shoe, bat, ball)

UPON REQUEST A STUDENT WILL MATCH SIX PICTURES OF THINGS THAT GO TOGETHER.

Place six pictures before the student (shoe, bat, plate, rake, sun, hat). Give him one card at a time from the second set (sock, ball, cup, hoe, moon, hat) and say, "Which one goes with this?" The student is to match the ones that go together. (If a student matches two that you feel do not go together ask him why he thinks they go together. If he has a logical reason for his choice, accept it.)

This item is passed if a student can correctly match all six pictures.

48. Building block designs from cards

UPON PRESENTATION OF A CARD, A STUDENT WILL BE ABLE TO BUILD THE BLOCK DESIGN SHOWN ON THE CARD. (NO DESIGN WILL EXCEED NINE BLOCKS.) (See p. 83 for designs)

Place a card with a block design before the student. Say to him, "Make your blocks look like this." The student stacks the blocks the way the design shows (color is not important here). Make sure the blocks are stacked and not just placed on the card.

This item is passed if a student is able to complete two out of the three designs presented.

49. Sequencing according to a pattern (bead stringing)

WHEN PRESENTED WITH A PATTERN, THE STUDENT WILL BE ABLE TO STRING BEADS ACCORDING TO THE PATTERNS. (See p. 84 for bead designs)

Place a bead sequence pattern before the student. Place a box of beads before the student. Say to the student, "string these beads so that they look like this." The student is to independently pick the beads in order and string them.

This item is passed if the student is able to string three bead patterns without assistance.

50. Spatial relationships (four and five piece puzzle)

UPON REQUEST A STUDENT WILL BE ABLE TO ASSEMBLE A FOUR PIECE PUZZLE.

Place a completed puzzle before the student. Direct the student to look at the completed puzzle. Then take the puzzle apart, mix the pieces and say, "You put the puzzle together." The student manipulates the pieces and reassembles the puzzle.

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This item is passed if the student successfully assembles the puzzles within a normal amount of time.

51. Recognition of color (black, brown, white, orange, purple)

UPON REQUEST A STUDENT WILL FIND AND NAME THE COLORS BLACK, BROWN, WHITE, ORANGE AND PURPLE.

Place five cubes before the student; one black, brown, white, orange and purple.

- a. The teacher says, "Find the brown cube." The student points to the correct color. Continue until all of the colors are found. This item is passed if a student correctly can point to each color upon request.
- b. The teacher points to a cube and asks, "What color is this?" Continue until all the colors are named.

This item is passed if a student is able to name the color correctly.

52. Recognition of objects (pictures) that do not belong.

GIVEN A SET OF PICTURES, THE STUDENT WILL BE ABLE TO IDENTIFY THE ONE THAT DOES NOT BELONG.

Place before the student five pictures--four of food, and one not a food. Say to the student, "Which one does not belong?" The student finds the one that does not belong.

Place before the student five pictures, four of toys, one that is not a toy and say, "Which picture does not belong?" The student locates the picture that does not belong.

All of these items are passed if the student is able to locate the picture that does not belong. (For your own information ask him if he knows why it does not belong--he does not need to know this to pass the item.)

53. Graduated symbols

UPON REQUEST A STUDENT WILL BE ABLE TO ARRANGE FIVE CIRCLES IN GRADUATED FORM.

Place five cards before the student with circles varying in size. Pick up the largest circle and place it before the student saying, "Put all the circles here so that they go from big to little." Allow the student to complete the arrangement independently.

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This item is passed if the student is able to arrange five circles according to size.

54. Grading--(long, short) using three sizes.

GIVEN THREE STICKS VARYING IN SIZE, A STUDENT, UPON REQUEST WILL ARRANGE THEM ACCORDING TO SIZE.

Place three sticks before the student (put sticks in no order) and say, "Place these sticks so that they go from long to short."

If a student does not understand the instruction, show him what is meant. Arrange the sticks in size order saying, "This is the longest, this is next, and this is the shortest." Allow the student to watch. Then pick up the sticks and say, "Now, you do that."

This item is passed if a student arranges the sticks in size order, either from long to short or from short to long. If the teacher demonstrated the task, and the student performed it, it is marked as a pass.

55. Spatial Relationships

UPON REQUEST A STUDENT WILL BE ABLE TO ASSEMBLE A TWO PIECED CIRCLE AND A FOUR PIECED CIRCLE.

Place part of the circle cut in half before the student, present him with the other half saying, "Put this together."

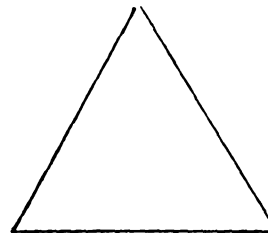
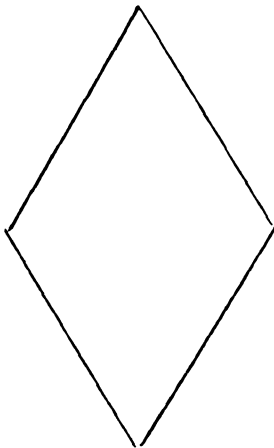
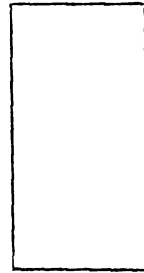
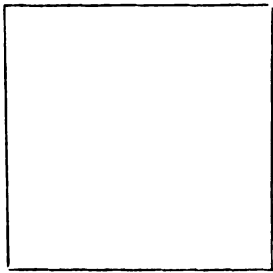
Place one part of the circle cut in quarters before the student, present him with the other three parts saying, "Put this together."

This item is passed if the student correctly assembles the half circle and the quarter circle.



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24. Recognition of parquetry shapes



48. Building Block designs from cards

Yellow
Orange
Red
Purple

Design 1

Red	Brown	Red
Brown	Red	Brown

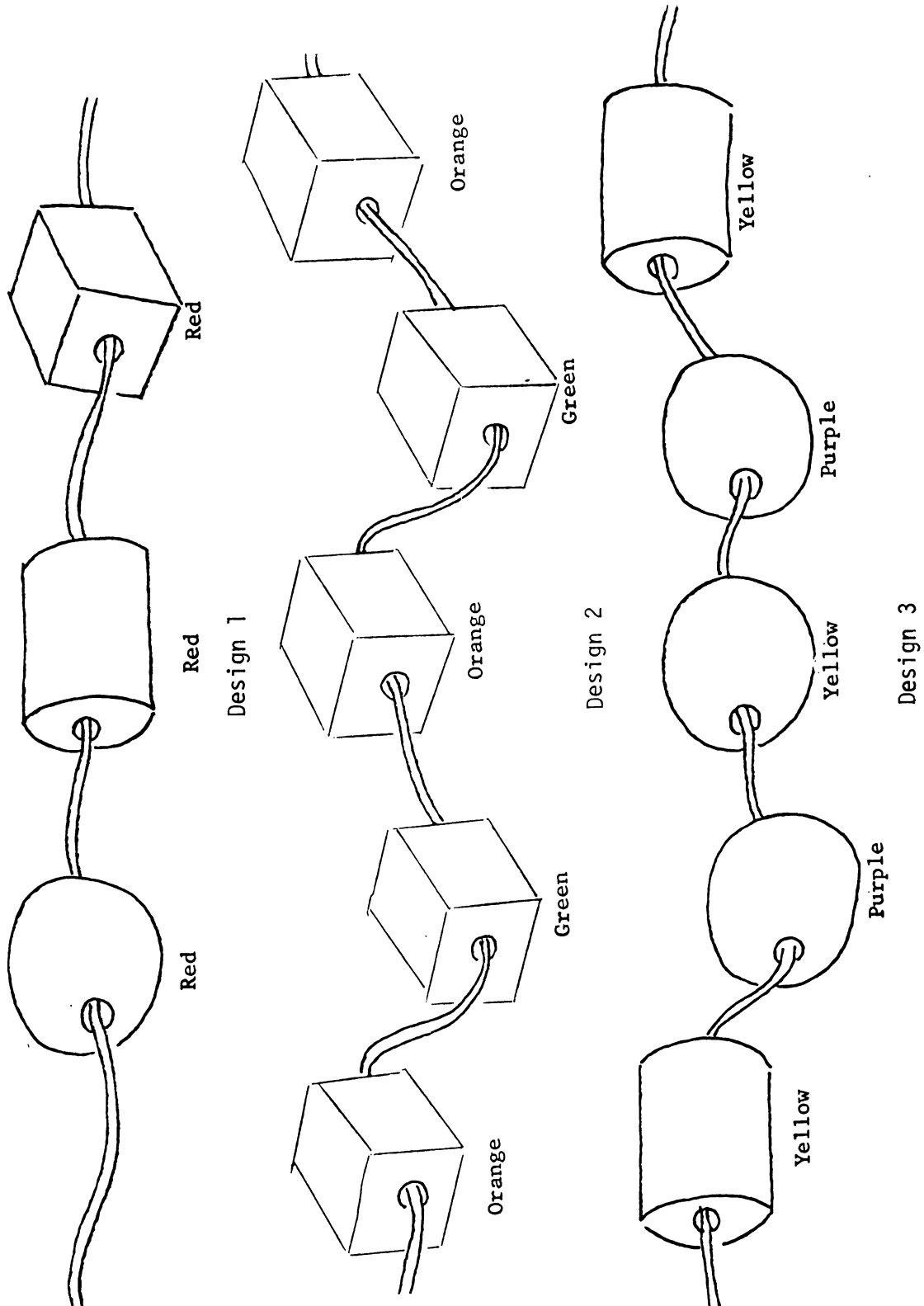
Design 2

Brown		
Green	Green	
Black	Black	Black

Design 3



49. Sequencing according to a pattern (bead stringing)



Student

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sock
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Pre-Academic Skills: Student Response
Sheet

Student's Name _____ Date _____

1. Recognition of common objects

a.	b.
glass _____	glass _____
brush _____	brush _____
cup _____	cup _____
comb _____	comb _____
sock _____	sock _____
shoe _____	shoe _____

2. Common objects according to function.

a.	b.
glass _____	glass _____
ball _____	ball _____
shoe _____	shoe _____
spoon _____	spoon _____
comb _____	comb _____
car _____	car _____

3. Recognition of body parts

a.	b.
eyes _____	eyes _____
ears _____	ears _____
nose _____	nose _____
mouth _____	mouth _____
hands _____	hands _____
feet _____	feet _____
stomach _____	stomach _____

4. Discrimination of sound-making objects

clicker _____
bell _____

5. 1-1 correspondence

yes _____
no _____

6. Recognition of pictures of objects

a.	b.
cup _____	cup _____
glass _____	glass _____
comb _____	comb _____
brush _____	brush _____
shoe _____	shoe _____
sock _____	sock _____

7. Nesting according to size

yes _____
no _____

8. Pictures according to function

a.	b.
fork _____	fork _____
soap _____	soap _____
pencil _____	pencil _____
hammer _____	hammer _____
knife _____	knife _____

9. Recognition of shape

a.	b.
circle _____	circle _____
square _____	square _____
triangle _____	triangle _____

10. Recognition of size

a.	b.
large _____	large _____
small _____	small _____

11. Prepositional directions

on _____
in _____
under _____

12. Som
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12. Sorting grossly different objects

cubes _____
 animals _____
 pegs _____

13. Copy block design from a structure

tower _____
 train _____
 bridge _____

14. Recognition of action in pictures

eating _____
 running _____
 sweeping _____
 washing _____
 sleeping _____

15. Spatial relationships

① _____

② _____

16. Concept of one

yes _____
 no _____

17. Recognition of size of shape

● _____
 • _____
 ■ _____
 ■ _____
 ▲ _____
 ▲ _____

18. Recognition of clothing

a.	b.
shoes _____	shoes _____
socks _____	socks _____
pants _____	pants _____
shirt _____	shirt _____
dress _____	dress _____
coat _____	coat _____
hat _____	hat _____
boots _____	boots _____

19. Recognition of food

a.	b.
milk _____	milk _____
bread _____	bread _____
apple _____	apple _____
orange _____	orange _____
meat _____	meat _____
potato _____	potato _____
beans _____	beans _____
corn _____	corn _____

20. Recognition of colors

a.	b.
red _____	red _____
blue _____	blue _____
yellow _____	yellow _____
green _____	green _____

21. Sorting according to form

yes _____
 no _____

22. Amount concept

a.	b.
one _____	one _____
two _____	two _____

23. Sorting color

Yes _____
 No _____

24. Recogn
square

25. Spatia

a.
toy _
person _

26. Recal

yes _
no _

27. Recogn

a.
heavy
light

28. Discr

a.
yes _
no _

29. Recogn
objec

a.
house
chair
tree

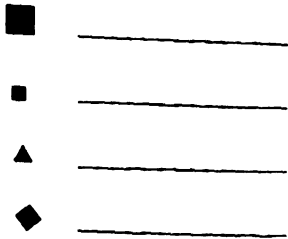
30. Discr

a.
rough
smooth

31. Amount

one
two
three

24. Recognition of parquetry squares



25. Spatial relationships

a. toy _____ b. toy _____
 person _____ person _____

26. Recall of missing objects

yes _____
 no _____

27. Recognition of weight

a. heavy _____ b. heavy _____
 light _____ light _____

28. Discrimination of size

a. yes _____ b. yes _____
 no _____ no _____

29. Recognition of similar objects

a. house _____ b. house _____
 chair _____ chair _____
 tree _____ tree _____

30. Discrimination of texture

a. rough _____ b. rough _____
 smooth _____ smooth _____

31. Amount concept of three

one _____
 two _____
 three _____

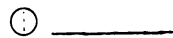
32. Discrimination of taste

sweet _____
 sour _____

33. Discrimination of smell

Vicks _____
 Rosewater _____
 Cloves _____

34. Spatial relationships



35. Introduction to pegboard

design 1 _____
 design 2 _____
 design 3 _____

36. Recall from memory

flower _____
 animal _____
 clothing _____
 furniture _____

37. Recognition of parts of objects.

wheel _____
 button _____
 pen cap _____
 lid _____
 shoestring _____

38. Recognition of difference

yes _____
 no _____

39. Recall of missing shape

circle _____
 square _____
 triangle _____

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40. Separating a number of objects
 one _____
 two _____
 three _____
 four _____
41. Recognition of size
 a. large _____ b. large _____
 middle size _____ middle size _____
 small _____ small _____
42. Simple construction
 a. _____ b. _____
43. Recognizing missing parts
 dog _____
 wagon _____
 boy _____
 bike _____
 chair _____
44. Matching texture by touch
 1. _____
 2. _____
 3. _____
45. Lotto
 yes _____
 no _____
46. Discrimination of sound
 yes _____
 no _____
47. Things that go together
 shoe _____
 bat _____
 plate _____
 rake _____
 sun _____
 hat _____
48. Building block designs
 design 1 _____
 design 2 _____
 design 3 _____
49. Sequencing according to pattern
 yes _____
 no _____
50. Puzzle
 yes _____
 no _____
51. Recognition of color
 a. black _____ b. black _____
 brown _____ brown _____
 white _____ white _____
 orange _____ orange _____
 purple _____ purple _____
52. Objects that do not belong
 food _____
 toys _____
53. Graduated symbols
 yes _____
 no _____
54. Grading
 yes _____
 no _____
55. Spatial relationships
 ⊙ _____
 ⊕ _____

1. Recognition

UPON REQUEST
COMMON OBJECT

A. Material

B. Procedure

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2. ID

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a.

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Pre-Academic Skills: An Instructional
Program

1. Recognition of common objects

UPON REQUEST THE STUDENT WILL MATCH, FIND AND CALL BY NAME SIX COMMON OBJECTS.

A. Materials: Two identical sets of shoes, glasses, combs, socks, cups, brushes.

B. Procedure:

1. EXPLORATION: Give the student the double set of objects to explore. Notice whether he tends to match likes. If so, omit matching below.

2. IDENTITY: Teacher presents each item to the student saying, "This is a ____." Allow the student time to look at, touch and repeat the name of the object. Teacher continues until all items are identified.

3. RECOGNITION:

a. Matching: The teacher presents an object identical to an object on the table saying, "Find one like this." Continue until all items are matched. (If a student has difficulty matching, see Alternative A below.)

Alternative A: Two objects are placed on the table. The teacher presents an object identical to one on the table saying, "Find one like this." Objects are added as student progresses in skill.

b. Finding: The teacher places all items on the table. The teacher says, "Find the ____." (If a student has difficulty finding an object, see Alternative A below.)

Alternative A: Present student with two objects. The teacher asks for one of the objects. As student progresses, add more subjects.

4. RECALL: Teacher holds up one object and asks, "What is this?" Students responds with the name or close approximation.

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2. Recognition

UPON REQUEST
FUNCTION (U

A. Material

B. Procedu

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C. Additional activities: Use other objects, toys, etc., for matching. (At this time make sure the items are identical.)

2. Recognition of objects according to function

UPON REQUEST A STUDENT WILL MATCH, FIND AND CALL BY NAME THE FUNCTION (USE) OF SIX OBJECTS.

A. Materials: One of each--Set I--glass, ball, shoe, spoon, comb, car; Set II--cup, ball, sock, fork, brush, truck.

B. Procedure:

1. EXPLORATION: Place all of the objects in front of the student and encourage him to explore the objects. Notice whether the student explores the object according to its function (e.g. does student pick up the comb and attempt to comb his hair). If a student indicates that he knows the function, in the identity step stress the verbal language of the function.

2. IDENTITY: The teacher presents each item to the student saying,
 "This is a glass (cup). We drink from the glass (cup)."
 "This is a shoe (sock). We wear a shoe (sock)."
 "This is a spoon (fork). We eat with a spoon (fork)."
 "This is a ball (). We throw a ball ()."
 "This is a comb (brush). We fix our hair with a comb (brush)."
 "This is a toy car (truck). We play with a toy car (truck)."

Allow time for the student to look at and observe and repeat the use of each object.

3. RECOGNITION:

a. Matching: Place the six objects from Set I in front of the student. Give him one object at a time from Set II saying, "Find one that's like this one." Continue until all objects are matched according to function.

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Alternative A: if student is unable to match the above do the following: As Set I is placed on the table give the name and function of each item. "This is a spoon--we eat with it." As each item in Set II is presented say, "This is a fork, we eat with this." Find another object we eat with.

Alternative B: If student is still unable to match the object reduce the number of objects used to three. Follow the procedures of Alternative A.

Alternative C: If student is unable to match objectives following Alternative B proceed with the following. Present a glass, cup and ball. "We drink from a glass, we drink from a cup. We throw a ball." "Do we drink from a ball?" "No." "Show me something we drink from." Student selects another object. As soon as a student can locate from the group of objects two things that we drink from add the object that would go with the ball. Once two sets of objects are able to be matched add a fifth object. Work up until all 12 objects are used.

- b. Finding: Teacher places all the objects in front of the student saying, "Find the one we eat with (wear, play with, drink from, throw, use on our hair)."

Variation: Ask the student to find the two objects we eat with (wear, play with, drink from, throw, use on our hair).

Alternative A: If a student is unable to handle all 12 objects present only one set at a time asking the above questions.

Alternative B: If a student is unable to handle six objects use three. More difficulty with this will demand that the above procedures used for matching be reviewed again.

3. RECALL: Teacher points to one of the 12 presented items and says, "What do you do with this one?" Student either says the word or

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3. Recognition

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demonstrates by action its use. If a student merely demonstrates and is able to vocalize the word demand that he say the word.

C. Additional Activities: Use other concrete objects that can be matched according to function.

3. Recognition of body parts on self and doll

STUDENT WILL BE ABLE TO MATCH, FIND AND CALL BY NAME SEVEN BODY PARTS. (EYES, EARS, NOSE, MOUTH, HANDS, FEET, TUMMY)

A. Materials: doll, mirror

B. Procedures:

1. EXPLORATION: Give the doll to be used to the student to explore. Observe if he locates body parts on the doll.

2. IDENTITY: The teacher points to the doll and says, "Here are the doll's eyes" then points to the student and says, "Here are _____ eyes." Continue until all seven body parts are named.

3. RECOGNITION:

a. Matching: Point to a specific body part of the doll and say, "Find this (these) on you." If a student has a difficult time finding the parts of his face have him sit in front of a mirror and locate them by looking in the mirror. If a student cannot locate body parts continue with Alternative A.

Alternative A: As the teacher points to a body part on the doll, aid the student by taking his hand and finding the same body part on himself. Gradually reduce the amount of physical aid given to the student.

b. Finding: Place the doll in front of the student. Say, "Find the doll's eyes." "Find your eyes." Continue with the remaining six body parts. Again, use the mirror if the student finds it difficult to find the parts of his face. If a student has difficulty finding specific body parts go to Alternative A.

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Alternative A: Identify for the student once again his body parts. "These are your eyes." "Where are your eyes?" If the student cannot handle all seven body parts reduce the number to three. Use the doll.

4. RECALL: Teacher points to a specific body part on the doll and asks, "What is this?" "What are these?" Do not accept the student pointing to the same body part on himself unless he is a nonverbal student with no basic signs. Encourage vocalization and close approximation or recognized American Sign Language.

- C. Additional Activities: -Use the flannel board with body parts to be assembled.
-Have the student lie down on a large sheet of paper, trace around his body. Help him place his body parts on the paper.

4. Discrimination of sound-making objects.

STUDENT WILL IDENTIFY OBJECTS ACCORDING TO THE SOUND THEY MAKE

A. Materials: bell, clicker, music box (two sets if possible)

B. Procedures:

1. EXPLORATION: Place the three noise making objects before the student. Observe if he is able to work each one. (To be able to work the object is not the goal of this lesson, however.)
2. IDENTITY: The teacher picks up each object and while the student is watching, make a sound with the object. Each sound is identified and talked about.
3. RECOGNITION: Not applicable.
4. RECALL: Place the three objects before the student. If you have an identical set, make a noise with one of the objects (out of sight of the student). Have the student point to the object that made the sound. If only one set is available--place the objects before the student. Shield them with a screen. Make a sound with one of them, remove the screen, have the student point to the object that made the noise.

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- C. Additional Activities: Use other objects, toys, etc. for matching. (At this time make sure the items are identical.)

5. Amount concept 1-1 correspondence

THE STUDENT WILL PAIR ONE SET OF OBJECTS TO ANOTHER SET EQUAL IN NUMBER

A. Materials: five dogs, five bones; or five bowls, five spoons.

B. Procedures:

1. EXPLORATION: Give the student the five dogs and the five bones. Observe how he explores each item. Does he match 1-1 without direction? If he does, skip the rest of this lesson.
2. IDENTITY: The teacher places a dog on the table and says, "This is a dog." Follow the same procedure with the bones.
3. RECOGNITION:
 - a. Matching: Line the dogs on the table in front of the student. Tell the student to give a bone to each dog. If student is unable to do this go to Alternative A.

Alternative A: Place the dogs in a line on the table. Demonstrate to the student how to give a bone to each dog. Each dog gets only one bone.

6. Recognition of pictures of objects.

A STUDENT WILL BE ABLE TO MATCH, FIND AND LABEL SIX PICTURES OF COMMON OBJECTS.

A. Materials: Two identical sets of pictures of common objects (use colored photographs of common objects used in No. 1 of the series.)

B. Procedures:

1. EXPLORATION: Give the student a chance to explore the pictures. If he matches the identical pictures, omit the item on matching in this lesson.
2. IDENTITY: Present each picture to the student saying, "This is a cup," etc. If the student

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remembers the function of it, give him a chance to talk about it. Continue with the rest of the pictures in the same way.

3. RECOGNITION:

- a. Matching: Place one set of pictures before the student. Give him the other set to match. Give him one picture at a time.

Variation: Give the student all of the pictures in the second set at once.

Alternative A: Place the concrete objects on the table, give the student a picture and have him find the object. (Remember these should be photographs of the actual objects.)

- b. Finding: Place the pictures in front of the student saying, "Find the cup." Continue the same procedure for all of the pictures.

Alternative A: If a student has difficulty with this go back to Alternative A above with concrete objects.

4. RECALL: Present the pictures to the student, saying, "What is this?" Student responds with its name or a close approximation.

C. Additional Activities: -Match simple pictures that are identical.

7. Nesting according to size

A STUDENT WILL BE ABLE TO NEST THREE OBJECTS ACCORDING TO SIZE.

A. Materials: two identical sets of nesting items.

B. Procedures:

1. EXPLORATION: Give the student the three objects. Observe if he is able to nest them independently. If so, omit this entire lesson.

2. IDENTITY: Beginning with the largest object, present the object to the student talking about its size characteristic. "This is a big box." Continue presenting each block to the student indicating each time that the block

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is smaller than the one shown before it. Show him how they nest, one inside of the other, with the biggest on the bottom.

3. RECOGNITION:

- a. Matching: Place all of the objects from one set in a row in front of the student (place them in descending order). Give him one object at a time from the second set saying, "Find one the same size as this one." Place the object from the second set in front of the object from the first set. After all objects have been matched, say to him, "Put them together like this." As the teacher places one box at a time inside of the bottom one, have the student do the same thing. (The blocks have been placed in order in the horizontal position, so just move down the line.)

Alternative A: If a student has difficulty matching and nesting three blocks, limit the number to two and follow the above procedure. Gradually work up to include all three blocks.

- b. Finding: Place the three blocks randomly before the student. Say to him, "Find the biggest block." Then ask him to find the next biggest block and to place it inside the bigger one. Continue with the smallest block.

4. RECALL: Place all three blocks before the student and say, "Put all of these together." The student nests the boxes without any other additional help.

8. Recognition of objects in pictures according to function

THE STUDENT WILL MATCH, FIND AND NAME OBJECTS IN PICTURES AND THE FUNCTION THEY PERFORM.

- A. Materials: two sets of cards, not identical in shape, but performing the same function (fork, soap, pencil, hammer, knife); (spoon, soap, pen, hammer, sword). Any other pictures may be used that show a function that the student may have met in his environment.

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B. Procedures:

1. EXPLORATION: Give the student the two sets of cards to explore. If he matches those that are similar according to function, omit the matching exercise of this lesson.
2. IDENTITY: Present the student with one picture at a time. Give its name and the function it performs. "This is a fork, we eat with a fork." "What do we do with a fork?" "Here is a spoon. We eat with a spoon." "We have two things that we eat with, a fork and a spoon." Encourage the student to repeat the words and the function. Let the student dramatize the use of the fork and the spoon. Continue with the rest of the cards.

3. RECOGNITION:

- a. Matching: Place the cards from one set before the student. Give him one card at a time from the second set and say, "Find one here that does the same thing as this one." The student is to match the card from set one with the card from set two. Continue with the rest of the cards.

Variation: After the cards are placed before the student, give him the entire set of cards from set II and have him match them all independently.

Alternative A: If a student has difficulty matching objects that function the same, reduce the options to two. Place two cards before him and present him with one to match with one of the two presented. Talk with him about the function of the pictures he matches.

Alternative B: If a student is still having difficulty, find concrete objects to use. Let him dramatize with each one before matching them.

- b. Finding: Place all ten cards before the student and say, "Find the two cards that show something we eat with." The student picks up the fork and the spoon. Replace them on the table and continue with the rest of the pictures.

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Alternative A: If a student has difficulty locating cards from a group of ten, place only one set before him and have him locate from a group of five.

Alternative B: If a student has difficulty locating a card from a group of five, limit the number to two and ask him for a particular card from a group of two.

Alternative C: If a student is still having difficulty, dramatize the action for him while using the word.

4. RECALL: Place all ten cards before the student. Point to one card at a time and say, "What do we do with this?" The student responds with the name of the function. Accept a sign only if he is unable to say the word.

Alternative A: Place five cards before the student, point to one and say, "What do we do with this?" The student responds with the function.

- C. Additional Activities: -give the student additional practice in matching objects that perform the same function.

9. Recognition of shape (circle, square, triangle)

A STUDENT WILL BE ABLE TO MATCH, FIND AND LABEL A CIRCLE, SQUARE AND TRIANGLE.

- A. Materials: two sets of forms (wooden, plastic or cardboard) of a circle, square and triangle. Color constant. (Use three dimensional forms, if possible.)

B. Procedures:

1. EXPLORATION: Give the student the two sets of forms to explore. If he matches the like ones, omit the item on matching in this lesson.
2. IDENTITY: Present the student with one form at a time saying, "This is a circle," etc. Give the student time to listen to the label and repeat it.

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3. RECOGNITION:

- a. Matching: Place one set before the student. Give him one from the second set and say, "Find one like this." The student is to match it with the other two forms.
- b. Finding: Place the circle, square and triangle before student. Say to him, "Find the circle, the square, the triangle."

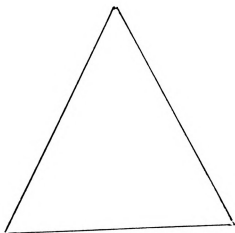
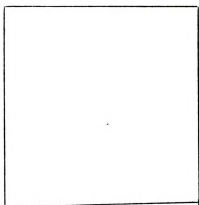
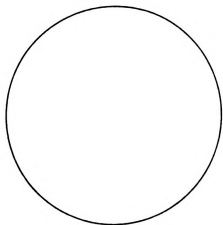
Alternative A: Limit the number to two and follow the same procedure as above.

- 4. RECALL: Present the student with a form and say, "What is this?" Continue with the other two forms. Accept the word or a close approximation.

- C. Additional Activities: -sort circles, squares and triangles (dimensional)
-sort pictures of circles, squares and triangles



9. Recognition of shape



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10. Recognition of size (big, little), (large, small) all characteristics constant except for size.

UPON REQUEST A STUDENT WILL MATCH, FIND AND CALL BY NAME OBJECTS THAT DIFFER IN SIZE.

A. Materials: two large spoons, two small spoons that differ only in size and/or two large blocks, two small blocks that differ in size only. If blocks are used try to obtain uncolored blocks.

B. Procedures:

1. EXPLORATION: Give the four spoons to the student. Encourage him to explore them. Observe if he tends to group them according to size without being asked. If he does, skip No. 3. a. Matching.

2. IDENTITY: The teacher places the large spoon in front of the student saying, "This is a large (big) spoon." Allow time for the student to understand what was said. Place the small spoon in front of the student saying, "This is a small (little) spoon." Repeat the label again. Allow student time to repeat the label.

3. RECOGNITION:

- a. Matching: Place one large spoon and one small spoon in front of the student. Present the student with a large spoon and say, "Find one like this." Do the same with the small spoon.

Alternative A: If a student is unable to match spoons according to size, use blocks with the above procedures. If changing the object does not help, find a large mixing spoon and a small measuring spoon. Again follow the above procedures.

Alternative B: If a student is still unable to match size have student stand and dramatize a big step, a little step. Continue with the above procedures using large coffee cans and small tuna cans.

- b. Finding: Place the large and small spoon before the student saying, "Find the large (big)

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spoon," "Find the small (little) spoon."
If student is unable to find the correct spoon, continue with Alternative A.

Alternative A: Hold up a spoon saying, "Find a big spoon like this." Emphasize the size. If student is unable to find the spoon go back to No. 3., a. Matching.

4. RECALL: Teacher points to one of the spoons and says, "What spoon is this?" Student says the name or shows by gesture that he recognizes the size. If a student is unable to do this go back to Recognition No. 3., a. and b. stressing the size concept.

- C. Additional Activities: -use a sorting tray with large blocks/beads and small blocks/beads.
-use a large coffee can with a plastic lid with a square form cut out of the lid for large blocks and another coffee can with a lid with a small square cut out for small blocks.

11. Prepositional directions (on, in, under)

A STUDENT WILL ILLUSTRATE AND NAME THE POSITIONS OF ON, IN AND UNDER.

A. Materials: a box, two small toys

B. Procedures:

1. EXPLORATION: Present the student with the box and the toy. Observe what he does with them. Does he unconsciously show these positions?
2. IDENTITY: Place the box before the student. The teacher takes the toy and says, "The toy is in the box." The toy is placed in the box. Let the student place the toy in the box. Discuss what it means to be in the box. Continue with the other positions in the same way. Encourage the student to show how he can stand in something, on something, under something.
3. RECOGNITION:
 - a. Matching: The teacher places a toy in a box and asks the student to get in a box, on a chair, under a table.

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- b. Finding: The student is given the box and the toy. The teacher says, "Put the toy under the box." The student follows the directions. "Put the toy in the box." "Put the toy on the box." The student places the toy in the appropriate position each time.

Alternative A: If a student has difficulty with positions, stress just one position at a time. Give him plenty of examples and allow him to get physically involved with his own body. Gradually add a new position until he is able to handle all three.

4. RECALL: The teacher shows some position with the toy and the box and asks the student, "Where is the toy?" The student responds with the location. Continue with all of the positions.

- C. Additional Activities: -use pictures that show various positions in space, let the student match them.

12. Sorting grossly different objects (cubes, animals and pegs), (nuts, bolts, washers)

A STUDENT WILL MATCH, SORT AND NAME COMMON OBJECTS ACCORDING TO SHAPE.

- A. Materials: four cubes, four animals, four pegs, three sorting boxes or four nuts, four bolts, four washers.

- B. Procedures:

1. EXPLORATION: Place three trays before the student. Give him the set of 12 objects. Observe if he sorts them on his own. If he does, omit the matching item in this lesson.

2. IDENTITY: Identify for the student each item in the group. "This is a cube. This is a peg. This is an animal. This is another animal, let's put it with this animal." Continue the same with the rest of the objects. If the student wants to place the object after it has been identified, let him do so.

3. RECOGNITION:

- a. Matching: Place one of each type of object before the student. Present him with another object,

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

one at a time, saying, "Find one like this."
The student places the object near the one that is like it.

Variation: Place three trays before the student with one object in each tray. Give him all the rest of the objects and say, "Put these where they go." Allow the student to work independently.

- b. Finding: Place the three trays before the student. In each tray are the sorted objects. Say to the student, "Show me the cubes." "Show me the animals." "Show me the pegs." The student points to each tray as it is requested.

4. RECALL: Place the three trays before the student. In each tray are the sorted objects. Point to each tray and say, "What are these?" The student responds with the name of the objects.

- C. Additional Activities: -give the students opportunity to sort objects according to shape or kind.
-sort pictures according to types:
food, clothing, toys, etc.

13. Copy block design from a structure. (Tower  , Train  , Bridge )

A STUDENT WILL BE ABLE TO COPY THREE BLOCK DESIGNS, THE TOWER OF THREE, THE TRAIN AND THE BRIDGE.

- A. Materials: two sets of cubes (at least four in each set).

- B. Procedures:

1. EXPLORATION: Give the student the blocks to explore. Observe whether he attempts to build structures with them.
2. IDENTITY: Show the student how blocks can be placed on top of one another to build things. Let the student practice building things after he has been shown how to stack them.
3. RECOGNITION:

- a. Matching: The teacher builds a tower of three blocks then says, "You build a tower." The

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student attempts to build a tower. Continue in the same way with the train and the bridge.

Alternative A: If a student has difficulty copying a design begin with a simple tower of two. Show him how to stack them up. Continue with a tower of three. For the train, begin by placing blocks beside each other, gradually add the smoke stack. For the bridge, show the student how to place two blocks a little distance from each other then how to balance a third block on top.

- b. Finding: (This part of the lesson is optional. It is not important that the student knows the names of the cube structures, however, if you have students that you feel would profit by knowing the names of the structures continue with the next two parts.) The teacher builds each of the structures then asks, "Point to the bridge," "the train," "the tower." The student points to the structure that is named.

Variation: Ask the student to build a tower. See if he can build it on request without seeing a copy of one. Continue with the train and bridge.

4. RECALL: (Optional Part.) Build the three structures and ask the student what each one is called. The student responds with the name.

- C. Additional Activities: -give your students plenty of chance to build things from cubes. Point out to them how to determine where to place each block.

14. Recognition of action in pictures.

A STUDENT WILL BE ABLE TO MATCH, FIND AND NAME ACTION IN PICTURES.

- A. Materials: two sets of identical pictures showing action
B. Procedures:

1. EXPLORATION: Give the student the two sets of pictures to explore. Observe if he matches the identical ones or if he acts out the action.

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2. IDENTITY: Identify with the student the action in each picture. Encourage the student to act out what he sees in the picture.

3. RECOGNITION:

a. Matching: Place one set of action pictures before the student (use at least six pictures). Present him with a card from the second set saying, "Find one like this." The student matches the identical picture. Continue with the entire set.

Variation: Place the cards from set one in front of the student. Give him the entire group from set two saying, "Find the cards that go together." Allow the student to complete the task on his own.

Alternative A: If a student has difficulty matching the pictures, have the student dramatize the action in each picture.

b. Finding: Place the pictures from set one before the student. Say to him, "Find the picture that shows someone _____ (eating, sleeping, running, washing, sweeping, etc.)." The student points to the correct picture.

Alternative A: If a student has difficulty with this, limit the number of pictures that he has to choose from. Gradually increase the number.

4. RECALL: Present the student with a picture saying, "What is the boy/girl doing in this picture?" The student responds with the action word or a sign.

C. Additional Activities: -let the students play a game with each other. One person holds up a picture, another person does the action.
-play a guessing game. One student chooses an action to portray, the other students try to guess what he is doing.

15. Spatial relationships

A STUDENT WILL BE ABLE TO ASSEMBLE FROM PARTS TO WHOLE TWO BASIC FORMS, CIRCLE AND SQUARE.

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A. Materials: two sets of two forms; circle, square--one set cut in half, one set uncut.

B. Procedures:

1. EXPLORATION: Place before the student the two uncut forms and then give him the cut shapes. Observe whether the student puts the forms together like the completed ones. If he does, omit Matching and Finding.
2. IDENTITY: Place the two uncut forms before the student. Show him how the cut forms fit together to make a whole piece. Name the shapes.
3. RECOGNITION:
 - a. Matching: Place the cut forms together in front of the student. Give him the uncut forms to match with the first set.
 - b. Finding: The two uncut forms are placed before the student to serve as guides. The teacher then gives him the four cut forms and says, "Put these together to make a square and a circle." The student puts the four pieces together.

Alternative A: Place the two completed forms before the student; then give him the two halves of the circle and one half of the square saying, "Find the parts that go together." The student must discriminate between three parts, the two parts that go together. Continue with the rest of the forms.

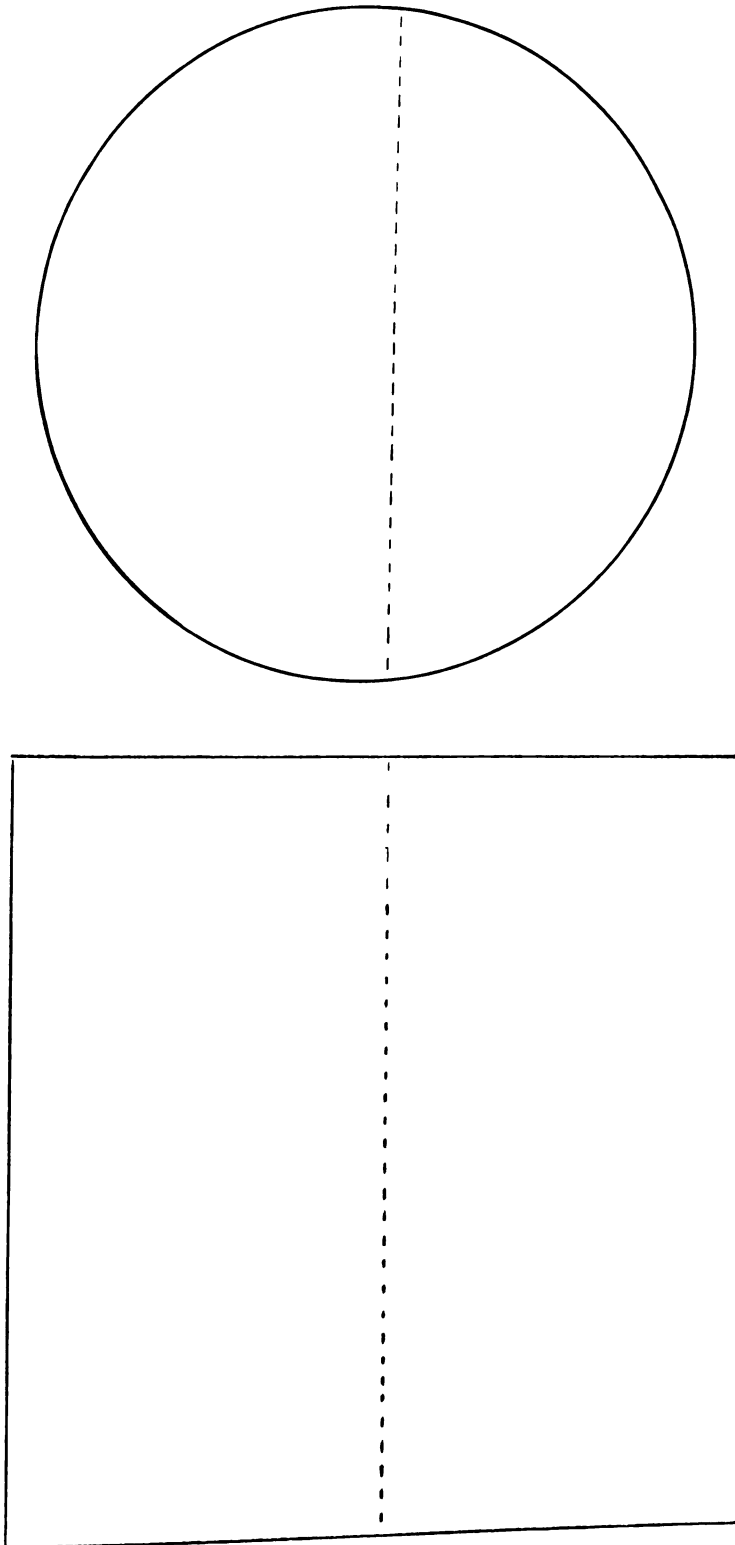
Alternative B: If a student is unable to handle all four parts, present him with the circle only. Place both completed forms before him, give him the two pieces of the circle saying, "Put this together. Make it look like one of these." Continue with the square.

4. RECALL: Place all four cut forms before the student saying, "Put all of these together to make a circle and square. The uncut guides are not used."

C. Additional Activities: -use one and two piece puzzles.

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15. Spatial relationships



16. Concept of one (one, more than one)

A STUDENT WILL BE ABLE TO DISCRIMINATE AND NAME A SET CONTAINING ONE MEMBER AND A SET CONTAINING MORE THAN ONE MEMBER.

A. Materials: four trays, two trays containing one object, two trays containing six objects. (Color and shape held constant.)

B. Procedures:

1. EXPLORATION: Give the student an opportunity to explore the four trays. If he matches them according to number, omit the item on matching in this lesson.

2. IDENTITY: Place the tray with one object before the student saying, "Here is one ____." Emphasize "one." Present the tray with six objects saying, "Here is more than one." Give the student time to understand what was said.

3. RECOGNITION:

a. Matching: Place two trays before the student, one containing one object, one containing more than one object. Present him with another tray saying, "Find one like this." Student is to match the trays that are the same.

b. Finding: Place a tray with one object and a tray with six objects in front of the student. Say, "Find the tray with one ____." "Find the tray with more than one ____."

Variation: Place six objects in front of the student. Say, "Put one ____ here (point to an empty). Student is to pick one object from a group of many and place it in a tray.

4. RECALL: Place a tray with one object before the student saying, "How many ____ are here?" Place a tray with more than one object in front of the student and say, "How many ____ are here?" Student responds with appropriate vocal response.

C. Additional Activities: -find objects showing one and more than one.

17. Recognition of size of shape

A STUDENT WILL MATCH, FIND AND LABEL LARGE AND SMALL CIRCLES, SQUARES AND TRIANGLES.

A. Materials: two sets of large forms, two sets of small forms (circle, square, triangle)

B. Procedures:

1. EXPLORATION: Give the student one set of large forms and a set of small forms. Observe how he manipulates them. Does he group them according to size or shape?
2. IDENTITY: Present the forms to the student, "This is a large circle, this is a small circle." Continue with the rest of the shapes in the same way. Allow the student to say the names with you.

3. RECOGNITION:

- a. Matching: Place before the student the three large shapes and the three small shapes. Give him one shape at a time from the second set saying, "Find one like this." Mix the sizes and shapes.

Variation: Place three large shapes in front of the student. Present him with the three small shapes and ask him to find one like it.

Alternative A: Use only the large shapes to match, then the small shapes. Then proceed to matching all six.

- b. Finding: Place the three large shapes and the three small shapes in front of the student, saying to him, "Find the large circle," "...the small square," etc. The student points to the appropriate shape.

Alternative A: If a student is having difficulty with size recognition, place only the circles in front of the student and ask for the large or small circle.

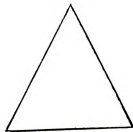
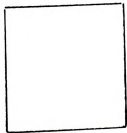
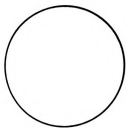
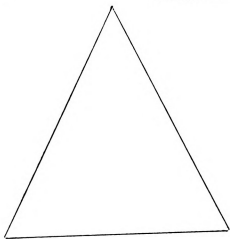
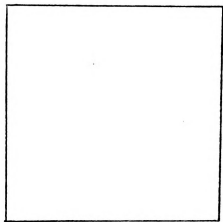
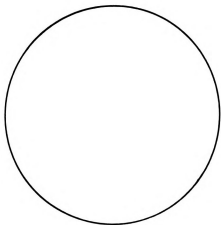
Alternative B: If a student is having difficulty with recognition of a shape, place

only the large shapes before him and request a certain shape.

4. RECALL: Present the student with a shape and ask, "What is this?" His response should include both shape and size. "This is a large circle." If he responds with size only, say, "a small what?" If he responds with shape only, say, "What kind of a circle?"

C. Additional Activities: -sorting according to size and shape.

17. Recognition of size of shape



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18. Recognition of clothing

THE STUDENT WILL BE ABLE TO MATCH, FIND AND NAME COMMON ARTICLES OF CLOTHING.

A. Materials: two sets of identical cards of clothing (shoes, socks, pants, shirt, dress, coat, hat, boots).

B. Procedures:

1. EXPLORATION: Give both sets of cards to the student. Observe if he matches the identical ones. If so, omit the matching item of this lesson.

2. IDENTITY: Use one set of cards. Present a card to the student saying, "This is a coat. We wear it outside." "This is a dress." Describe the function of the article of clothing as it is used in the locale where the student is living. Present all the cards in the same manner.

3. RECOGNITION:

a. Matching: Place one set of cards in a row in front of the student. Give him the cards one at a time from the second set and say, "Find one like this."

Variation: If a student is able to match with ease, give him the entire second set and say, "Find the picture on the table like these pictures." The student matches all the pictures without additional help.

Alternative A: If a student finds it difficult to match, begin with only two pictures. Have him find the one picture like the one you present to him. Gradually increase the number of pictures presented on the table.

Alternative B: Point out to the student those things that make two pictures alike.

b. Finding: Place one set of cards in a row in front of the student, say to him, "Find the coat." Student points to the picture of the coat. Continue the same for the rest of the pictures.

Alternative A: If a student is having difficulty with eight pictures, limit the number to four at a time.

4. RECALL: Present the student with one card at a time saying, "What is this?" Student responds with the appropriate name or close approximation.

C. Additional Activities: -use a flannel board with cut out clothes and a form to dress.

19. Recognition of common foods

A STUDENT WILL BE ABLE TO MATCH, FIND AND NAME EIGHT COMMON FOODS.

A. Materials: two identical sets of food cards containing milk, bread, apple, orange, meat, potato, beans corn.

B. Procedures:

1. EXPLORATION: Give the student the two sets of food cards. Observe whether he matches those that are alike. If he does, omit the item on matching in this lesson.

2. IDENTITY: Present the student with one food card at a time saying, "This is an apple." Give the student time to talk about each food item and to repeat its name.

3. RECOGNITION:

- a. Matching: Place the eight cards from Set I in front of the student. Present him with one card at a time from Set II saying, "Find one like this." The student matches the new card with one he already has on the table.

Alternative A: Limit the number of cards to three or four. Follow the above procedures.

- b. Finding: Place the eight cards in front of the student and say, "Find the apple." Student points to the appropriate picture. Continue in the same way with the rest of the pictures.

Alternative A: Limit the number of cards to four. Follow the above procedures.

4. RECALL: Present the student with one card at a time saying, "What kind of food is this?" The student responds with the name or a close approximation. Continue with all of the cards in this way.

C. Additional Activities: -match plastic food with pictures of food.

20. Recognition of colors (red, blue, green, yellow)

THE STUDENT WILL MATCH, FIND AND LABEL BY NAME FOUR BASIC COLORS.

A. Materials: two identical sets of blocks consisting of red, yellow, green and blue.

B. Procedures:

1. EXPLORATION: Give the two sets of blocks to the student. Observe what he does with them. If he groups them according to color, without prompting, omit No. 3., a. Matching.

2. IDENTITY: The teacher places one block down at a time saying, "This block is red." Allow the student time to understand what was said and repeat the name.

3. RECOGNITION:

- a. Matching: The teacher places one set of blocks in front of the student. One block from the second set is presented. "Find one like this." Student matches the blocks by color. If a student is unable to match, go to Alternative A.

Alternative A: Use only two colors. Place two blocks on the table, present the student with a third block, saying, "Find one like this." Gradually add a third color, then a fourth.

- b. Finding: Teacher places four blocks in front of the student saying, "Find the red block, etc. Student places in the tray the designated block.

Alternative A: If the student is unable to identify the four colors use only two colors. Follow the same procedure as above.

4. RECALL: Teacher places the four blocks in front of the student saying, "What color is this?" Student responds by saying or by close approximation the color of the block.

C. Additional Activities: -use various types of sorting by color
-string beads by color
-place colored clothes pins on cans of a designated color.

21. Sorting according to form (color constant, form varies)

A STUDENT WILL BE ABLE TO SORT OBJECTS ACCORDING TO FORM.

A. Materials: a set of forms (circle, square, triangle, etc.)
color is constant.

B. Procedures:

1. EXPLORATION: Give the student the set of objects that vary in form. Observe if he, independently, sorts them according to form. If he does, omit this lesson.

2. IDENTITY: Present the student with the forms one at a time. "This is a circle, feel it, see it's round." Continue with the rest of the shapes. As soon as one is found like one already presented, point out the fact that it is the same. Show the student why it is the same.

3. RECOGNITION:

a. Matching: Place one of each form before the student on trays. Present him with one form at a time saying, "Put this one where it goes." The student matches it with an identical object.

Variation: After the trays are placed before the student with one object in each, give him the entire set of objects to be sorted and let him work independently.

b. Finding: Place all of the forms before the student. Say to him, "Find all the circles." The student looks for all of the circles and places them in the tray. Continue with the rest of the forms.

Alternative A: If a student is unable to find the named form, hold up one form and say, "Find all the ones like this." The student then looks through the entire set of forms and finds the ones like the form presented.

4. RECALL: Place the forms before the student, point to a form and say, "What is this?" The student responds with the name of the shape. Continue at random pointing to various forms.

C. Additional Activities: -give the student many opportunities to sort objects according to form.

22. Amount concept--two

THE STUDENT WILL MATCH, FIND AND NAME THE AMOUNT OF TWO.

A. Materials: six blocks, six spools, four trays.

B. Procedures:

1. EXPLORATION: Give the student two trays with two objects on each one and two trays with one object on each one. Observe what the student does with the trays. If he matches those that are numerically the same, omit the matching item in this lesson.
2. IDENTITY: Present the student with one object. Remind him that it is one. Encourage him to repeat it. Then present him with two objects. Count the two objects, label them for him, have him repeat the concept.
3. RECOGNITION:
 - a. Matching: Place the tray with one object and the tray with two objects before the student. Present him with the second tray of two objects and ask him to, "Find the tray that has the same amount as this." Student matches the trays with the same amount. Continue with the trays with one object.

Variation: Place one object on one tray and two objects on a second tray before the student. Give the student a group of three objects and ask him to make a tray that has the same number as the "one" tray and a

tray that has the same number as the "two" tray. (Here the student must take from a group of three, one or two objects.)

Alternative A: If a student cannot match one or two objects go back to Identity above.

- b. Finding: Place the trays with one and two objects before the student. Say to him, "Find the tray with two objects." "Find the tray with one object." The student points to the correct tray.

Variation: Place a group of five objects before the student. Say to him, "Give me two ____." The student will separate from the group of five two objects. Continue asking for one.

Alternative A: If a student cannot find the requested number of objects place two objects before him and ask him for two. Then place one object before him and ask for one. Then place a group of one and a group of two objects before the student and say, "Find two," "Find one."

4. RECALL: Place two objects before the student saying, "How many are here?" Point to one object saying, "How many is this?"

- C. Additional Activities: -provide objects for the student to count.
-have the student place one or two objects in each section of an egg carton.

23. Sorting color (form constant, color varies)

A STUDENT WILL BE ABLE TO SORT OBJECTS ACCORDING TO THE CHARACTERISTIC OF COLOR.

- A. Materials: a set of objects to be sorted (bears, beads, discs)

B. Procedures:

1. EXPLORATION: Give the student the set of objects. Observe what he does with them. Does he notice the different colors?

2. IDENTITY: Pick up one of the objects from the box, have the student review the name of the color. If he does not know the name of the color tell him the name having him repeat the name. Continue with all of the colors in the same way.

3. RECOGNITION:

- a. Matching: Place the box of objects before the student with five empty trays. Place one object of each color in each tray, then say, "Find all of the (bears) that are this color and put them in this tray." Let the student continue independently.

Alternative A: If a student has difficulty working this independently, place the box of objects before him and one empty tray. Have him locate only one color at a time out of the total set. Continue until each color has been sorted.

- b. Finding: Place the box of objects before the student. Say to him, "Find all of the blue bears and put them here." The student locates all of the objects with the color characteristic asked for.

4. RECALL: Place the box of objects before the student and five empty trays. Say to him, "Put each color in a different tray." The student is then to sort everything independently.

C. Additional Activities: -give the student different kinds of objects to sort according to color.

24. Recognition of parquetry shapes.

A STUDENT WILL MATCH AND NAME FOUR PARQUETRY FORMS WITH THEIR OUTLINE.

- A. Materials: two identical sets of parquetry blocks consisting of a square, a rectangle, an equilateral triangle and a diamond. One set of outline forms.

B. Procedure:

1. EXPLORATION: Give the student both sets of parquetry blocks. Observe if he matches them.

2. IDENTITY: Present the student with one form at a time, talking about the shape. Also present the outline forms and show how the forms match the outline.

3. RECOGNITION:

a. Matching: Place the four outline forms before the student. Present him with one block at a time and say, "Find where this one goes." The student places the block on the appropriate outline form.

Variation: After the forms are presented, give the student all four of the blocks and have him match them independently.

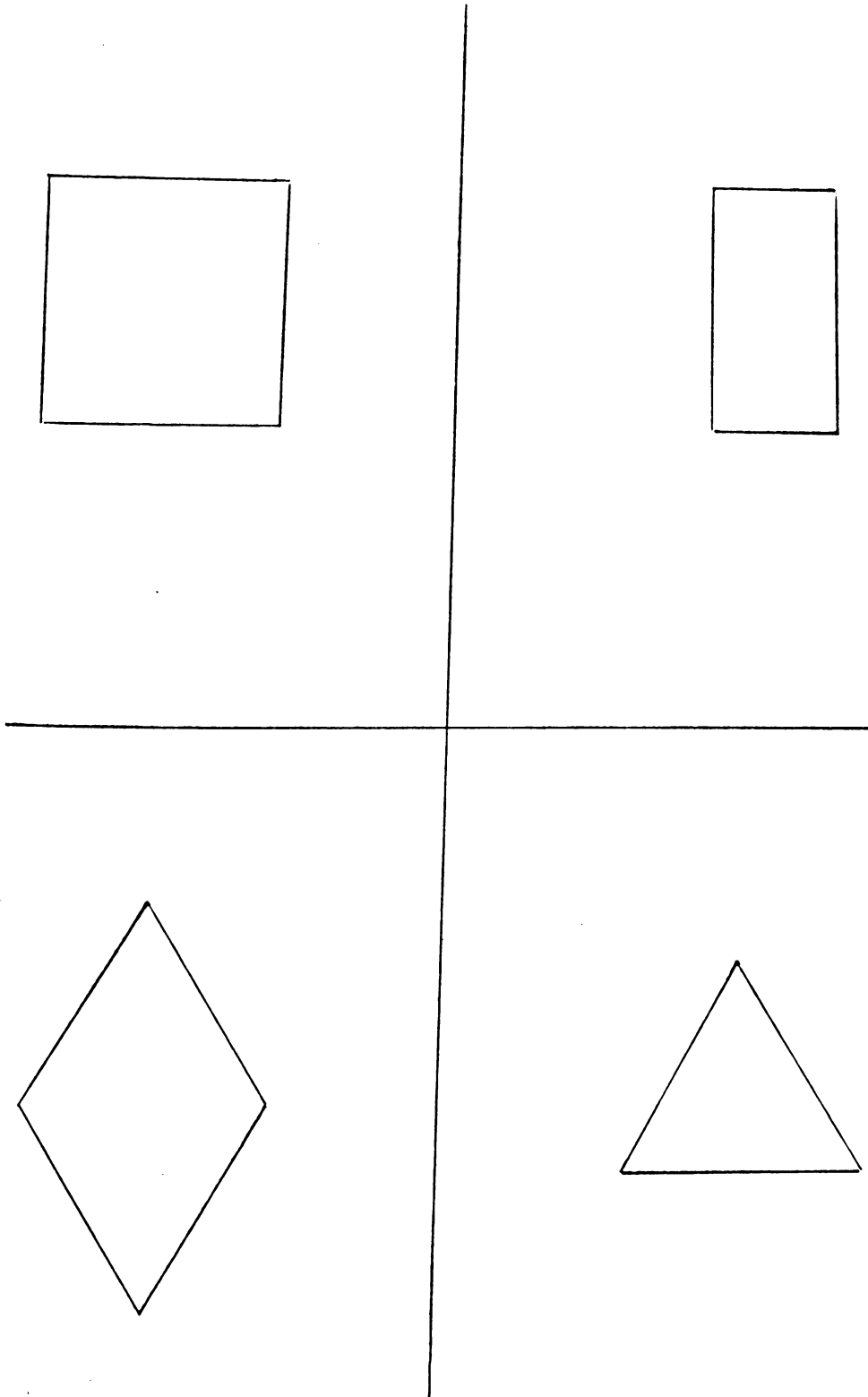
b. Finding: Place the outline forms before the student. Hold up one block at a time and say, "Where does this one go?" Without letting the student tactually touch the block have him find the appropriate outline. This requires just visual discrimination. The teacher places the block on the form.

Alternative A: If a student is having difficulty, have him try to guess a form, then let him put the block down to see if it fits. Talk about the characteristics of the blocks.

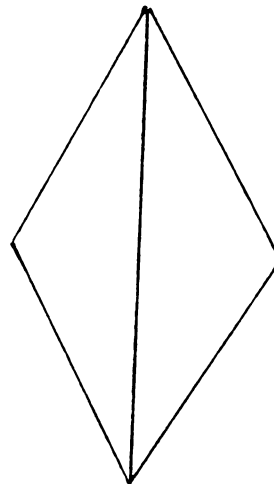
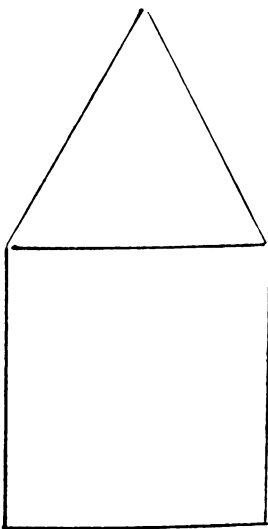
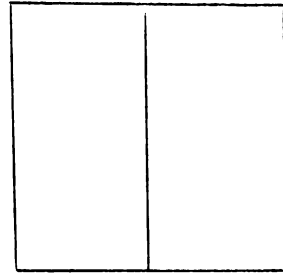
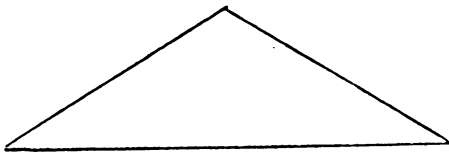
4. RECALL: Point to the parquetry block and ask what shape it is. "What shape is this?" A diamond. "Place the diamond on the outline of the diamond." Encourage using the name of the shape with the name of the outline.

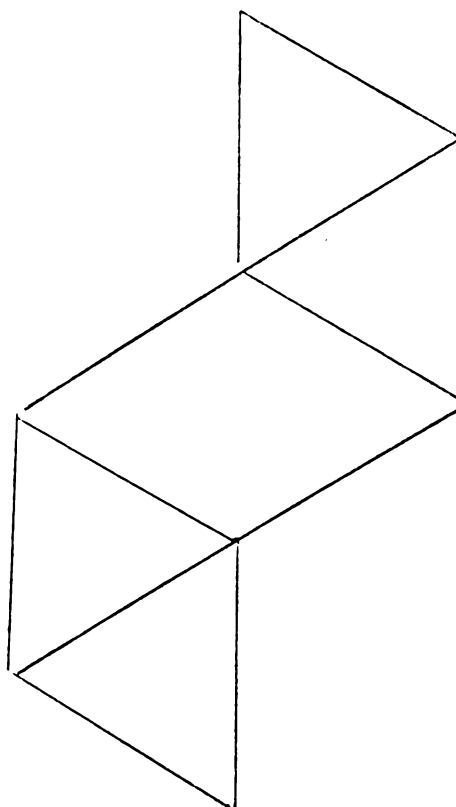
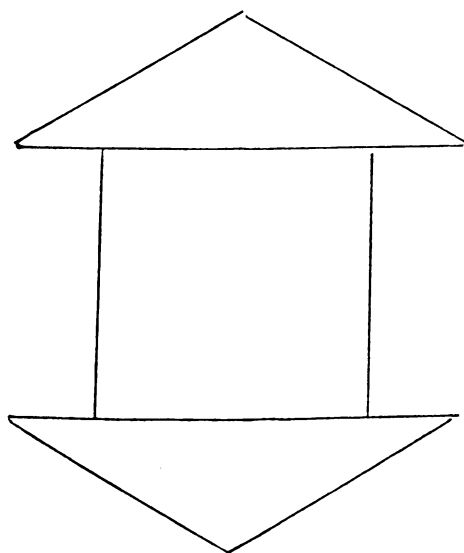
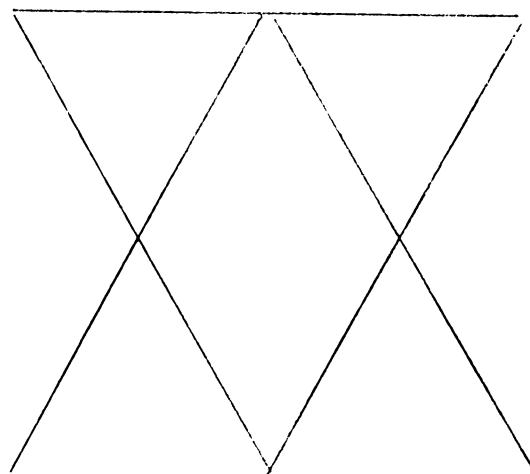
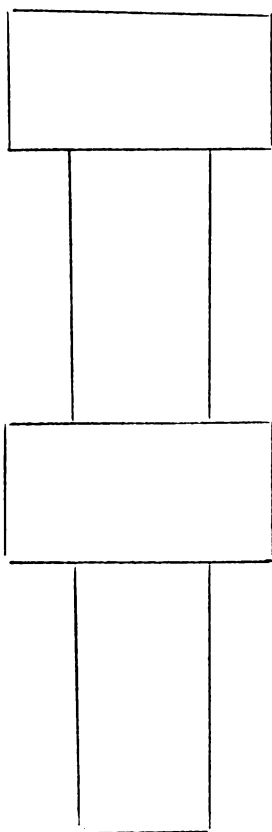
C. Additional Activities: -give the students an opportunity to work with parquetry blocks and match them to outline forms. Gradually add two forms together.

24. Recognition of parquetry shapes



Supplemental designs for No. 24--Recognition of parquetry shapes





25. Spatial relationships (assembly of pictures in two and three parts)

A STUDENT WILL BE ABLE TO DIFFERENTIATE AND ASSEMBLE PICTURES CUT IN TWO AND THREE PIECES.

A. Materials: an uncut picture of a toy and a person; a two piece picture of a toy and a person; a three piece picture of a toy and a person. All pictures are identical.

B. Procedures:

1. EXPLORATION: Give the student the pieces of the two and three piece puzzles to explore. Observe whether he places them together to form a whole picture.
2. IDENTITY: Present the student with the two pieces of the toy, assemble the picture, identify the toy. Do the same thing with the person. Discuss why it can only go together one way.

3. RECOGNITION:

- a. Matching: Place the two uncut pictures of the toy and the person before the student. Give him the pieces from the two piece puzzles saying, "Make these look like the picture." Encourage him to assemble the two two-piece puzzles. Remove the two-piece puzzles and present him with the three piece puzzles. Encourage him to assemble them.

Variation: If a student is able to assemble the pieces without looking at the uncut pictures, let him do so.

Alternative A: If a student has difficulty with assembly of the puzzles begin with only one two piece puzzle. Present the uncut picture and say, "Make yours like this one." Gradually add more puzzles.

- b. Finding: Place the pieces of the two two-piece puzzles before the student. Say to him, "Find the pieces that would make a person." The student is to locate those pieces when, if put together, would make a person. Continue in the same way with the toy. Follow the above procedure with the two three-piece puzzles.

Have the student identify those pieces that would go together to make a toy or a person. (Can he see whole in parts?)

4. RECALL: Present the student with all of the pieces from all four puzzles and say, "Put these together to make four pictures." Allow the student to work on his own.

Alternative A: If a student is unable to work with all four puzzles at a time, present him with the two puzzles that would make the toys or the two puzzles that would make a person.

Alternative B: If a student is unable to discriminate the pieces of a two piece puzzle from the pieces of a three piece puzzle, give him the two piece puzzle of the person and the toy.

- C. Additional Activities: -use puzzles that stress parts to whole relationships.
-use a flannel board with pictures cut into various numbers of pieces to assemble.

26. Recall of missing objects from memory:

THE STUDENT WILL BE ABLE TO RECALL FROM MEMORY AN OBJECT THAT HAS BEEN REMOVED FROM A GROUP OF OBJECTS.

- A. Materials: objects from Set I, No. 1 (glass, ball, shoe, comb, spoon, car)

B. Procedures:

1. EXPLORATION: Give the objects to the student to explore.
2. IDENTITY: Identify with the student the names and functions of the objects.
3. RECOGNITION: Place the objects in front of the student. While the student is looking, remove an object. Ask him what was removed. (This is done to introduce the idea "What is missing?")
4. RECALL: Place the objects in front of the student. Cover the objects or have the student cover his eyes. Remove one object. Student is to recall the object that was removed.

Alternative A: If student is unable to immediately recognize the missing object, help student name the objects that are still present or ask him if the one we use to comb our hair is missing, or the one we eat with, etc.

- C. Additional Activities: Prepare a game for two to play by having small recognizable objects available. Show two students how they can place two, three or four objects in front of each other, remove one and have the other student guess what is missing.

27. Recognition of weight (light, heavy)

THE STUDENT WILL MATCH AND NAME WEIGHTS OF LIGHT AND HEAVY.

- A. Materials: two five-pound bags of sand, two bags of cotton (all bags the same size)
- B. Procedures:
1. EXPLORATION: Give the student the four bags to explore. Notice if he matches the heavy and light ones. If so, omit matching in this lesson.
 2. IDENTITY: Present each bag to the student naming it as heavy or light. Let the student lift one while attaching a name to it. Talk about other objects that are heavy or light.
 3. RECOGNITION:
 - a. Matching: Give the student a light bag and a heavy bag. Let him feel them, then present him with the other bags, saying: "Find the ones that are the same." The student matches the bags according to weight.
 - b. Finding: Place a light bag and a heavy bag before the student. Say to him: "Give me the bag that is heavy." The student responds by giving the heavy bag.

Variation: Blindfold the student and have him find the requested bag by touch alone.

4. RECALL: Give one of the bags to the student and say, "What bag is this?" (Variation--"Is

that bag heavy or light?" The student responds with the name.

- C. Additional Activities: -talk about objects in the room that are heavy or light.

28. Discrimination/Recognition of size (long, short)

THE STUDENT WILL BE ABLE TO FIND, MATCH AND LABEL OBJECTS THAT ARE LONG OR SHORT.

- A. Materials: Three 8-12 inch sticks or rods. Three 4-6 inch sticks or rods. (Color is held constant.)

B. Procedures:

1. EXPLORATION: Give the student the six sticks to explore. If he matches them according to the size, omit the matching exercise of this lesson.
2. IDENTITY: Place the long stick in front of the student and say, "This stick is long." Proceed the same way with the other two long sticks. Make sure the student is observing the sticks. Use the same procedure for the short sticks.
3. RECOGNITION:
 - a. Matching: Place a long stick and a short stick in front of the student. Tell him to look at them. Give him a long stick saying, "Find one like this." Follow the same procedure for the rest of the sticks.

Alternative A: If a student is unable to match the sticks, re-examine the characteristics of the stick. Use just the base set and one matching set.

Alternative B: Make the differences in size more gross (i.e. use two three-inch sticks and two twelve-inch sticks.)

- b. Finding: Place a long and a short stick in front of the student saying, "Find the long stick," "Find the short stick."

Alternative A: If student is unable to find the requested stick act out the concepts "long," "short." Stretch big and

make yourself long--make yourself short. Use a retractable tape measure. Pull it out and make it long, contract it and make it short. Have the student make it long or short.

4. RECALL: Place the long and short stick before the student. Point to one of the sticks and ask, "What stick is this?" Student must respond with the name or give some manual sign.

Alternative A: If a student cannot give the name, again use the retractable tape measure having him identify the size.

- C. Additional Activities: -sort sticks that are long and short. Begin by making the sorting trays the same length as the sticks to promote immediate feedback as to the correctness of the response. Later make the sorting trays the same length to encourage finer discrimination.

29. Recognition of similar objects in pictures (different kinds of glasses, etc.)

A STUDENT WILL MATCH, FIND AND NAME OBJECTS WITH SIMILAR CHARACTERISTICS, OR THAT BELONG TO A COMMON CLASSIFICATION.

A. Materials: one set of common object cards

B. Procedures:

1. EXPLORATION: Present the student with nine cards (three chairs, three trees, and three houses). Observe whether he matches them according to kind. If he does, omit the matching item of this lesson.
2. IDENTITY: Present the student with one card, identify the picture on the card. Present him with another picture of the same type, again identify it. "This is a picture of a house, this is also a picture of another house, they are both houses." Proceed with the other pictures in the same way.

3. RECOGNITION:

- a. Matching: Place one set of pictures before the student (a house, a tree, and a chair). Present him

with another picture and say, "What is this? Put it with another one like it." Continue in the same way with the rest of the pictures.

Variation: Give the student the entire set of pictures to match independently.

Alternative A: If a student is unable to match pictures of similar objects, go back to "Identity" of this lesson.

Alternative B: If a student is still unable to match, go back to lesson 6, "Recognition of pictures of objects," and review that concept.

- b. Finding: Place the nine cards before the student and say, "Find a picture of a house, tree, chair." Continue with at least two requests for each object. Student is to point to the appropriate picture or pictures.

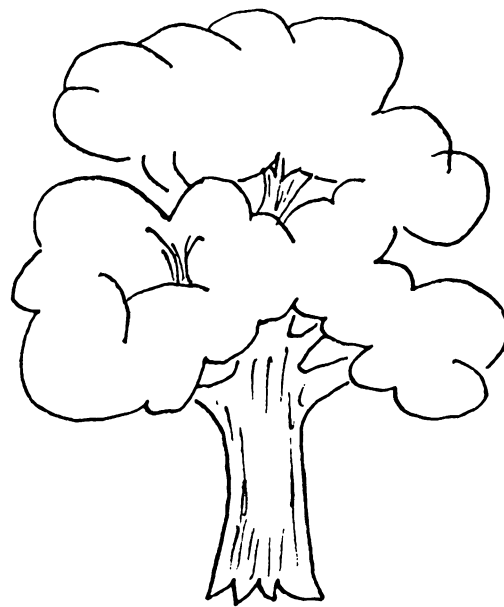
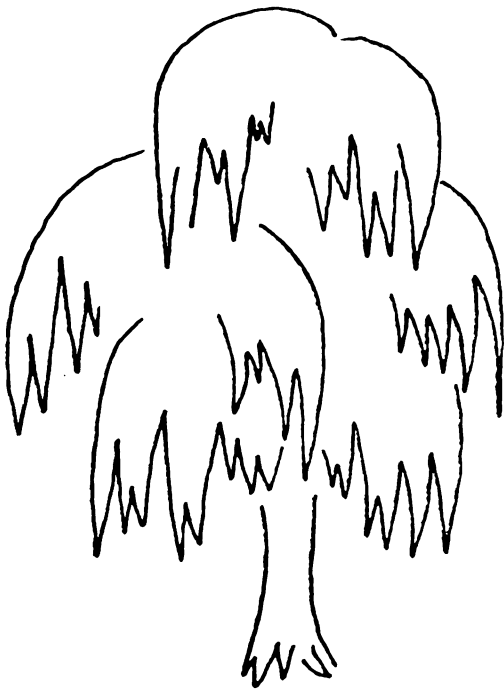
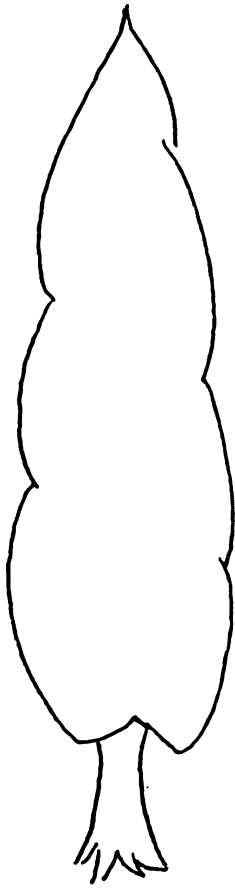
Alternative A: If a student is unable to handle all nine cards, present him with a set of three or a set of six, where the number of choices will be less.

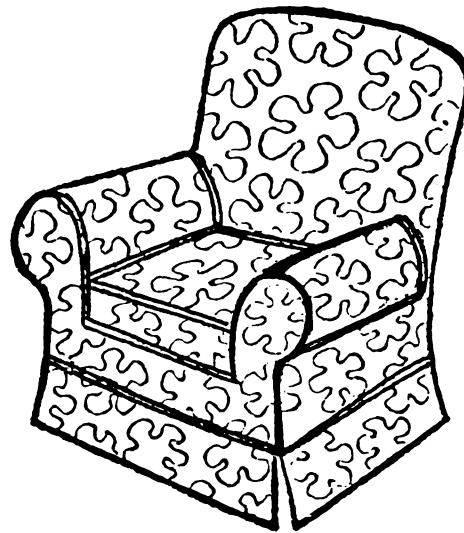
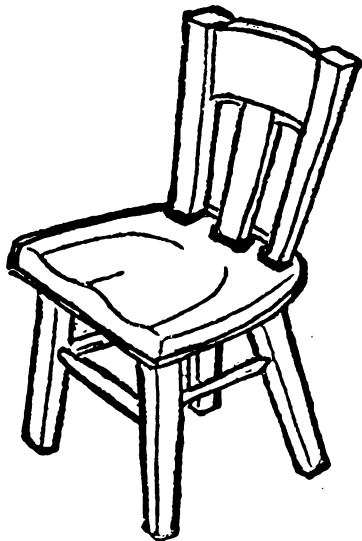
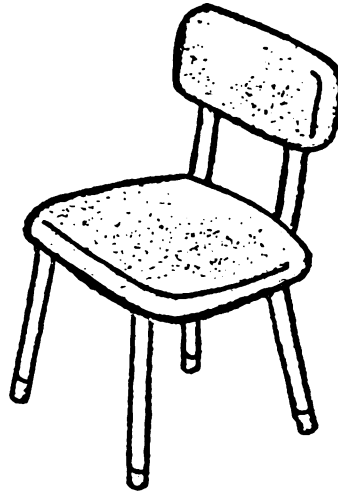
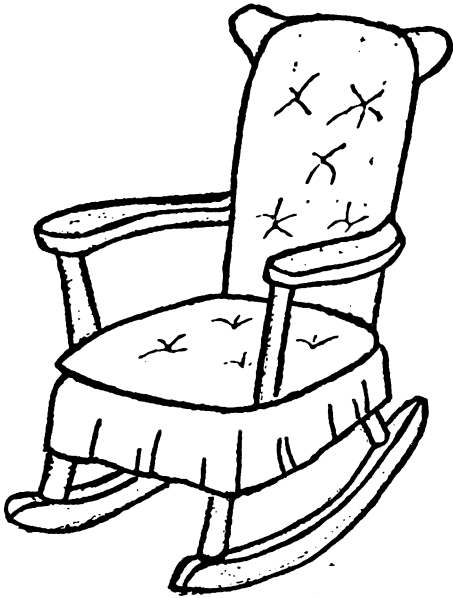
4. RECALL: Place the nine pictures before the student. The teacher points to one card at a time and says, "What is this?" The student responds with the name or a class approximation or sign.

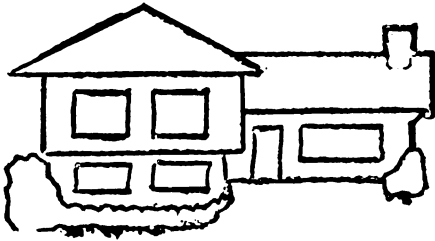
Alternative A: If a student is unable to handle nine choices, limit the pictures presented to six or three. (One or two of each picture type.)

- C. Additional Activities:
- allow the student a chance to group pictures according to type. Pictures from magazines work very well.
 - have students find pictures of various types of objects in books and magazines.

29. Recognition of similar objects in pictures







30. Discrimination/Recognition of texture (rough, smooth)

THE STUDENT WILL BE ABLE TO MATCH, FIND AND LABEL TEXTURES THAT ARE ROUGH OR SMOOTH.

A. Materials: two sets of texture cards, one smooth, one rough from each set. One blindfold. (If a blindfold is too distracting, use a screen to hide the cards.)

B. Procedures:

1. EXPLORATION: Give the student two identical rough and smooth textures. Encourage his feeling them, etc. Note as to whether he matches them according to some visual characteristics. Then blindfold the student or use a screen. Note as to whether he matches them according to texture without prompting. If he does, omit the matching item of this lesson.

2. IDENTITY: With the student blindfolded, present him with a texture card saying, "This is rough." Encourage him to feel the texture as teacher repeats, "This is rough." Proceed in the same way with the smooth texture.

3. RECOGNITION:

a. Matching: Present the two textures to the student. Allow time for him to feel them (student is blindfolded). Give him a third card saying, "Find one like this." Follow the same procedure for the second texture.

Alternative A: If a student is unable to match textures, present the two texture cards to him unblindfolded so that vision will be an aid. Follow the above matching procedure.

b. Finding: While the student is blindfolded, present him with a rough and smooth texture card. Ask him to "Find the rough one." "Find the smooth one."

Alternative A: Remove the blindfold and follow the above procedure.

4. RECALL: Present the student with the "rough" card saying, "What does this feel like?" Follow the same procedure with the smooth card. Use both sets of cards. Accept any approximation that identifies the texture.

C. Additional Activities: -find rough and smooth textures within the classroom

31. Amount of concept of three

A STUDENT WILL MATCH, COUNT AND NAME THREE OBJECTS.

A. Materials: three trays, 12 objects (cubes, beads, etc.)

B. Procedures:

1. EXPLORATION: Present the student with three trays. On each tray have one, two and three objects. Present him with another set of 12 objects (not on trays). Observe whether he matches them according to number.

2. IDENTITY: Present the student with a tray with one object on it. Review the concept of one. Present him with a tray with two objects, review the concept of two. Present him with a tray with three objects. Count the objects, have him repeat the name.

3. RECOGNITION:

- a. Matching: Place the three trays before the student (one tray has one object, one tray has two objects and one tray has three objects). Present the student with two objects and say to him, "Find the tray that has the same as this." Continue with one and three objects. The student is to locate the tray that has the same number as presented.

Variation: Present the three trays to the student. Give him six objects in a group. Say to him, "Place in the empty tray the same number as is in the tray above it." (For this exercise six trays are needed. Three arranged in a row with objects in them, and three beside them empty.) The student is to count out of the group of objects the number needed to match the number in each tray.

Alternative A: If a student has difficulty matching three groups of objects, limit the number to two (use one object and three objects.) Gradually include two objects.

- b. Finding: Place three trays before the student with one, two and three objects on them. Ask the student to find the tray with one object, two objects and three objects. The student is to point to the appropriate tray.

Variation: Place a group of six objects before the student. Say to him, "Give me two ____." "Give me three ____." "Give me one ____." Each time the student gives the request number of objects, return them to the original group.

Alternative A: If a student is unable to find the designated number of objects, return to the "Identity" section of this lesson.

4. RECALL: Place the three trays before the student. Point to one of them and say, "How many is this?" The student responds with the appropriate number or sign. Continue until all are identified.

- C. Additional Activities: -using an egg carton, place one, two and three objects in the top rows of the carton. Give the student some counters and have him place the same number of objects in the sections right below the ones that are filled.

32. Discrimination of taste (sweet, sour), (sweet, salty)

A STUDENT WILL BE ABLE TO MATCH, FIND AND LABEL TASTES ACCORDING TO SWEET AND SOUR (SWEET AND SALTY).

- A. Materials: two sets of containers containing white syrup and white vinegar (or use salt and sugar).

B. Procedures:

1. EXPLORATION: Give the student a chance to explore the various tastes. (Dip tooth picks into the containers.)

2. IDENTITY: Give the student a chance to taste the sweet syrup saying, "This is sweet, taste it again, this is sweet." Follow the same procedure with the vinegar.

3. RECOGNITION:

- a. Matching: Place two containers (syrup, vinegar) before the student. Present a third one (syrup) to him. "Taste this and find the one that tastes like this." Follow the same procedure with the vinegar.

Variation: Use a small sugar cube and a piece of a pickle. Match with the syrup and vinegar.

- b. Finding: Place the syrup and vinegar before the student saying, "Find the sweet one." "Find the sour one."

4. RECALL: Have the student taste the syrup. "What taste is that?" Taste the vinegar, "What taste is that?" Student is to respond with the word or close approximation of the word describing the taste.

- C. Additional Activities: -use different kinds of sweet and sour foods.

33. Discrimination of smell

A STUDENT WILL BE ABLE TO DISCRIMINATE BETWEEN THREE DIFFERENT ODORS.

- A. Materials: two sets of three bottles with three different odors (Vicks, rosewater, cloves), any three distinct odors may be used.

B. Procedures:

1. EXPLORATION: Give the student three bottles to smell. Show him how to smell if he doesn't know how.

2. IDENTITY: Since there will not be a name associated with the odors, this part of the lesson will be spent in discussing with the student what he thinks about each smell. Does he like them? Which one does he like best? Is there one that he does not like? Has he ever smelled that odor before?

3. RECOGNITION:

- a. Matching: Place the three bottles in front of the student. Present him with a fourth bottle saying, "Find one that smells like this." Student then, by smelling, matches the two that smell the same. Continue in the same way with the rest of the bottles.

Alternative A: If a student has difficulty matching three odors, present him with only two to discriminate between.

- b. Finding: Not relevant to this lesson, unless the odors used are common.

4. RECALL: Discuss with the student other odors he is familiar with. Odors he likes, dislikes.

C. Additional Activities: -discuss types of smells.

34. Spatial relationships

A STUDENT WILL BE ABLE TO ASSEMBLE FROM PARTS TO WHOLE THREE BASIC FORMS, CIRCLE, SQUARE, TRIANGLE.

- A. Materials: two sets of three forms; circle, square, triangle--one set cut in half, one set uncut.

B. Procedures:

1. EXPLORATION: Place before the student the three uncut forms and then give him the cut shapes. Observe whether the student puts the forms together like the completed ones. If he does, omit matching and finding.
2. IDENTITY: Place the three uncut forms before the student. Show him how the cut forms fit together to make a whole piece. Name the shapes.
3. RECOGNITION:
 - a. Matching: Place the cut forms together in front of the student. Give him the uncut forms to match with the first set.
 - b. Finding: The three uncut forms are placed before the student to serve as guides. The teacher then gives him the six cut forms and says,

"Put these together to make a square, a circle, and a triangle." The student puts the six pieces together.

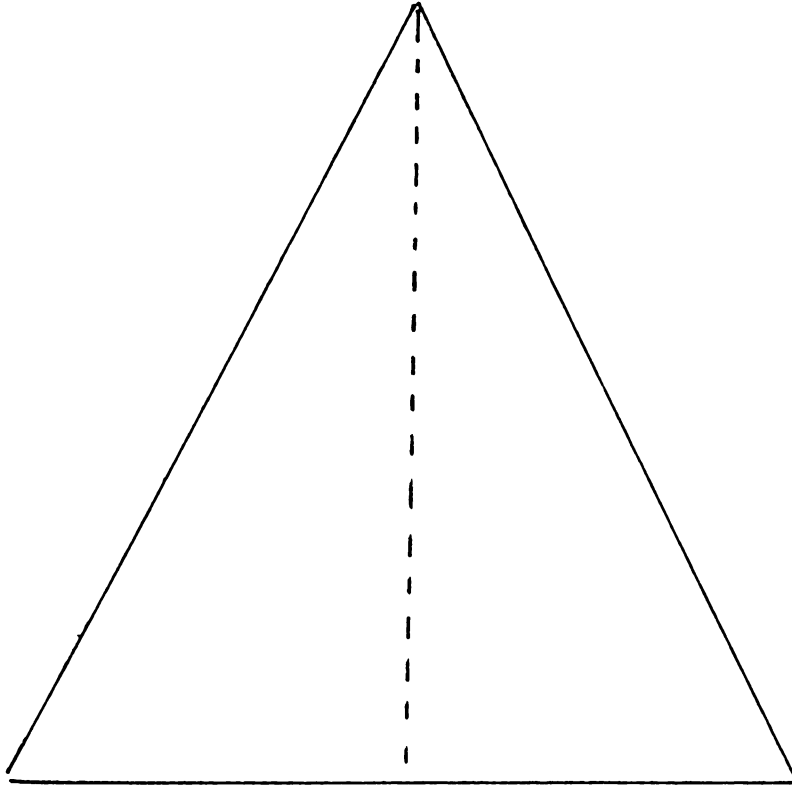
Alternative A: Place the three completed forms before the student; then give him the two halves of the circle and one half of the square saying: "Find the parts that go together." The student must discriminate between three parts the two parts that go together. Continue with the rest of the forms.

Alternative B: If a student is unable to handle all six parts, present him with the circle only. Place all three completed forms before him, give him the two pieces of the circle saying, "Put this together. Make it look like one of these." Continue with the square and the triangle.

4. RECALL: Place all six cut forms before the student saying, "Put all of these together to make a circle, square and triangle." The uncut guides are not used.

C. Additional Activities:

34. Spatial Relationships



35. Introduction to tactilemat pegboard

A STUDENT WILL BE ABLE TO MAKE SIMPLE PATTERNS ON A PEGBOARD

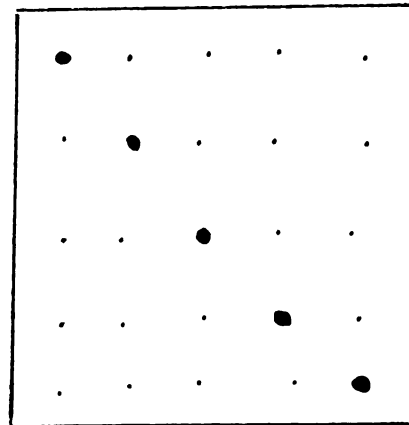
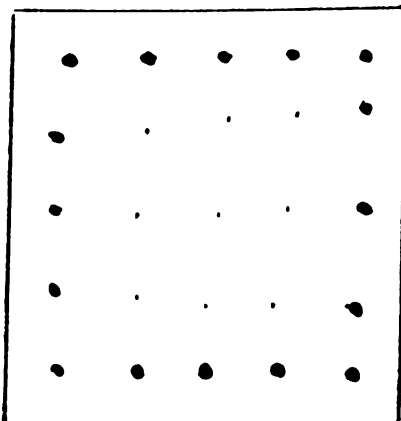
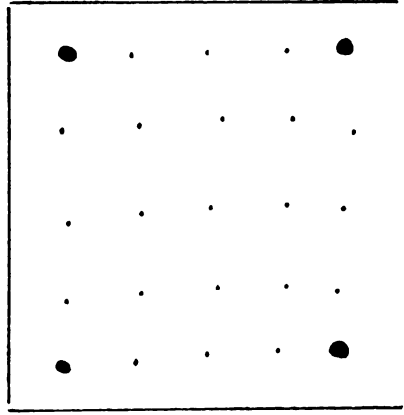
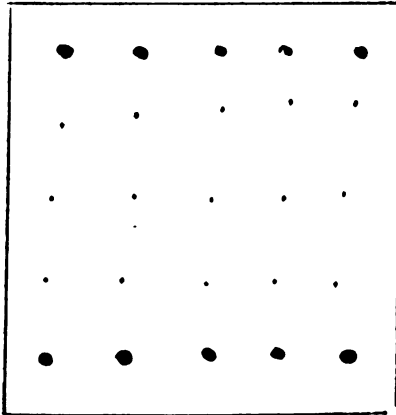
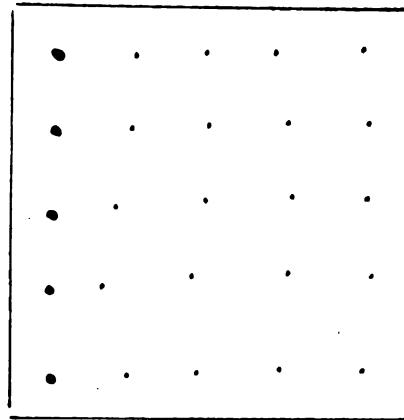
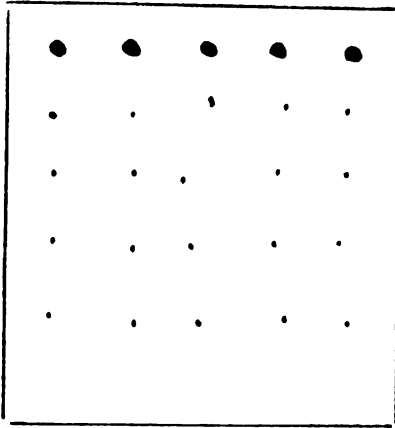
A. Materials: tactilemat pegboard and pegs

B. Procedures:

1. EXPLORATION: Give the student a pegboard along with some pegs. Observe if he independently places the pegs in the board.
2. IDENTITY: Talk with the student about the board--it's rough side, it's smooth side. Introduce the concepts--top and bottom and side. Fill the entire board and pegs.
3. RECOGNITION:
 - a. Matching: The teacher places one row of pegs along the top of the board; places it in front of the student and says, "Make one like this."

Alternative A: If a student cannot follow from a completed line, put the pegs in with him one by one.
 - b. Finding: Students learn to copy a variety of designs produced by the teacher.

35. Introduction to tactilemat pegboard



36. Recall of missing picture from memory.

A STUDENT WILL RECALL A MISSING PICTURE FROM MEMORY.

A. Materials: five common pictures of objects.

B. Procedures:

1. EXPLORATION: Give the five pictures to the student to explore.
2. IDENTITY: Present each picture to the student, identifying it for the student. Encourage the student to repeat the name. Talk a little about each picture.
3. RECOGNITION:
 - a. Matching: Not applicable to this lesson.
 - b. Finding: Place the five pictures before the student. Put a card over one of the pictures. Have the student name the one that is missing. (This is done with the student, looking to introduce the idea of one missing.)

Alternative A: If five pictures are too many for a student, lessen the number to three and continue with the same procedure.

4. RECALL: Place the five pictures before the student. Hide the cards, remove one of them, show the remaining cards to the student and ask, "Which one is missing?" The student names the missing card. Continue with the rest of the cards. After each guess, rearrange the cards.

Alternative A: If a student has difficulty naming the missing picture, use only three pictures (or two). Name each picture with the student before removing one.

Alternative B: Give cues to the student to aid him. "Is the picture missing that shows something we wear?" No. "Is the picture missing that shows an animal?" No. "Is the picture missing that shows some furniture?" Yes.

- C. Additional Activities: -show the students how they can play the "what's missing" game with each other.

37. Recognition of parts of objects (wheel from a car, button from a coat, etc.)

A STUDENT WILL MATCH AND IDENTIFY PARTS OF A WHOLE WHEN PRESENTED.

A. Materials: button, toy wheel, a pen cap, a jar lid, a shoe string, a box lid.

B. Procedures:

1. EXPLORATION: Place the part objects (button) and whole items (coat) before the student. Observe whether he matches the part to the whole without direction. If he does, omit the matching item of this lesson.

2. IDENTITY: Present each one of the small items. Talk about what it is and where it comes from. Do not use the whole object at this time.

3. RECOGNITION:

a. Matching: Place the large objects before the student (the coat, the pen, the toy car, the jar, the box and the shoe). Give the student one item at a time and say, "Put this where it belongs." The student is to match the item (part) with the object (whole).

Alternative A: If a student has difficulty with this, use just two items, the coat and button and the car and wheel. Talk about each part. "Can the wheel go with the coat? Why not?" "Can the button go with the car? Why not?" As the student begins to understand what is expected, continue to add more objects.

b. Finding: Ask the student to "Find the part that goes with the coat." (Here the coat is not present, just the verbal word "coat.") The student is to select the button from the six objects. Continue with the rest of the items.

4. RECALL: Say to the student, "What goes with the coat?" The student replies, "the button." The student may pick up the button as he says "button," but he must say the word or a close approximation.

- C. Additional Activities: -give the students opportunities to notice parts of things
 -introduce them to pictures of parts and wholes. "This is a part, what does it go with, find the picture."

38. Recognition of difference (which one is NOT.....?)

A STUDENT WILL BE ABLE TO DISCRIMINATE AND NAME AN OBJECT FROM A GROUP OF OBJECTS THAT IS DIFFERENT.

- A. Materials: three red cubes, one yellow cube, three green cubes, one black cube. (May need: three identical trucks, one car.)

B. Procedures:

1. EXPLORATION: Present the student with three identical objects, cubes or trucks and one object that is different from the other ones. Observe whether the student groups the like objects.
2. IDENTITY: Present the student with three identical objects (three red cubes) saying, "These objects are all red, they are the same." Present the student with another object that is different (one yellow cube) and say, "This cube is not red, it is different." Repeat the procedure with the trucks and car. Allow the student time to repeat the terms "same" and "different."

3. RECOGNITION:

- a. Matching: Place one red cube before the student. Present him with one red and one yellow cube. Ask him, "Which cube is not like this one, which one is different?" The student is to indicate the one that is different.

Alternative A: If a student does not understand how to determine the different one, let him match the two that are alike and then talk about the one that is different. Follow the same procedure with the trucks and car.

- b. Finding: Place the three red cubes and the one yellow cube before the student. Say to him, "Find

the one that is different." Follow the same procedure with the three green cubes and the one black cube, and the three trucks and one car.

4. RECALL: Place all four cubes before the student, point to the three that are the same and say, "These are the same, this one is ____." Give the student time to complete the statement with the term "different."

- C. Additional Activities: -give opportunities to the student to discriminate things that are different.
-use a flannel board--place in a group things that are the same and one that is different.

39. Recall of missing shape from memory.

A STUDENT WILL RECALL FROM MEMORY A MISSING SHAPE FROM A GIVEN SET.

- A. Materials: a large circle, square and triangle and a small circle, square and triangle.

B. Procedures:

1. EXPLORATION: Give the six shapes to the student to explore.
2. IDENTITY: Present each shape to the student, identifying it as a review.
3. RECOGNITION:
 - a. Matching: Not applicable to this lesson.
 - b. Finding: Place the six shapes before the student. Put a cover over one of the shapes. Have the student name the shape that is covered. (This is done with the student looking, to review the idea of one missing.)

Alternative A: If six shapes are too many for a student, lessen the number to three (either the large shapes or the small shapes). Continue with the same procedure.

4. RECALL: Place the six shapes before the student. Hide the shapes, remove one of them, show

the remaining shapes to the student and ask, "Which one is missing?" The student names the missing shape. Continue with the rest of the shapes. After each guess rearrange the cards.

Alternative A: If a student has difficulty naming the missing shape use only three shapes (either large or small). Name each shape with the student before removing one.

Alternative B: If a student is still having difficulty, go back to Lesson 36, "Recall of missing picture from memory."

C. Additional Activities: -use the flannel board and play the "What's Missing" game.

40. Separating a stated number of objects from a group (milk bottles)

A STUDENT WILL BE ABLE TO MATCH AND SELECT A GIVEN NUMBER OF OBJECTS FROM A GROUP (ONE, TWO, THREE AND FOUR).

A. Materials: two sets of Fisher-Price milk bottles.

B. Procedures:

1. EXPLORATION: Give the student the set of bottles to explore.
2. IDENTITY: Review with the student the number concepts of one, two and three. Introduce the number four.
3. RECOGNITION:
 - a. Matching: Place one, two, three or four bottles before the student. Give him a set of bottles and say, "Find this many bottles in your case." Show him how to set the bottles before him. "Do you have as many bottles as I have?" Continue until he has matched each number with bottles from his set.

Alternative A: If a student has difficulty matching the same number of bottles, place each bottle on a card with enough room left on the card for him to be able to place a bottle from his set on the card also. Say to him, "Put a bottle on each card where I have a bottle."

- b. Finding: Give the student the case with the bottles in it and say, "Give me two bottles of milk." The student takes from his case two bottles of milk. Continue requesting each number one, two, three and four.

Alternative A: If a student has difficulty selecting one or two bottles from a group of four or six, present him with one more bottle than the number asked for; for example, if you want him to give you two bottles, let him select from a group of three.

Variation: If a student knows the numbers five and six, include those numbers in the exercise. Or if a student appears to understand the number concepts, introduce the numbers five and six.

4. RECALL: Place a given number of bottles before the student and say, "How many bottles of milk do I have here?" The student responds with the number or some sign that he knows the number.

- C. Additional Activities: -give the student opportunity to separate a given number of objects from a group.

41. Recognition of size (large, middle size, small)

THE STUDENT WILL MATCH, FIND AND NAME OBJECTS THAT DIFFER IN SIZE.

- A. Materials: two identical sets of blocks that differ in size.

B. Procedures:

1. EXPLORATION: Give the student the two sets of blocks to explore. If he matches them according to size, omit the matching item in this lesson.

2. IDENTITY: Present the student with one block at a time, telling him the size of the block. Show him the relationship of the three blocks to each other.

3. RECOGNITION:

1. Matching: Place the blocks from one set before the student. Give him a block from the second

set and say, "Find one like this." The student is to match the two blocks that are the same size. Continue with the rest of the blocks.

Variation: After the one set of blocks are placed before him, give the student all of the blocks in the second set and ask him to match them. (This demands that the student be able to work somewhat independently.)

Alternative A: If a student is unable to match blocks differing in size, go back to Lesson 10 and review the entire lesson.

b. Finding: Place the three blocks before the student in descending order. Say to him, "Find the large block." The student points to the block. Continue with the rest of the blocks.

4. RECALL: Place the three blocks before the student. Point to one at a time saying, "What size block is this?" The student responds with the size word.

C. Additional Activities: -read the story "The Three Bears"
-sort objects according to size
-use a graduated peg board

42. Simple Construction (tinker toys)

A STUDENT WILL BE ABLE TO CONSTRUCT FROM TINKER TOYS A SIMPLE MODEL.

A. Materials: six tinker toy knobs, ten tinker toy sticks.

B. Procedures:

1. EXPLORATION: Give the student the knobs and sticks from the tinker toys. Observe if he manipulates them in a meaningful way.

2. IDENTITY: The teacher shows the knobs and sticks to the student and shows him how they can be put together. Spend some time letting the student manipulate them under guidance.

3. RECOGNITION:

- a. Matching: The teacher takes two knobs and one stick and puts them together, then says, "You make one like this." Let the student see your copy if it is needed.

The teacher then takes one knob and six sticks and puts them together and says, "You make one like this." Again the student copies the teacher's structure.

Alternative A: If a student is having difficulty indentifying the pieces, help him look at each piece individually and match each piece before it is put back together.

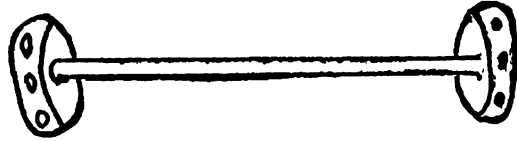
4. RECALL:

Present the student with one of the structures. Let the student look at it. Remove it from sight and say, "You make one like it." This is to see if a student can remember how a simple structure goes together without being able to see it.

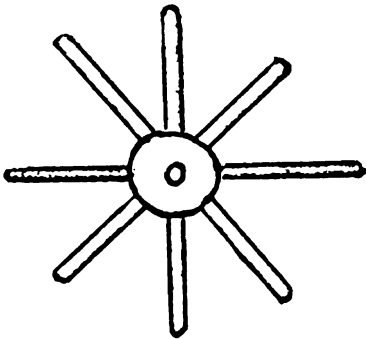
Alternative A: If a student has difficulty reconstructing the structure, let him see the pattern again, talk about it, notice the parts it has.

- C. Additional Activities: -encourage simple construction with tinker toys
 -let students copy what each other makes. Let the student who constructed the original check his classmates to see if they copied correctly.

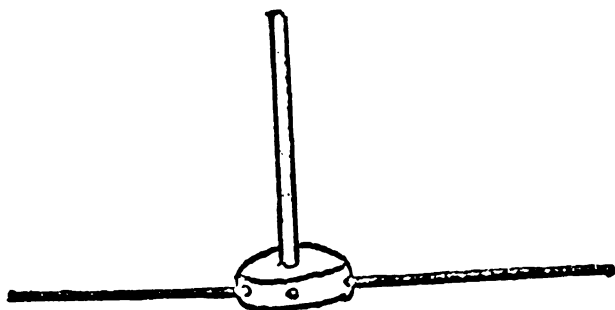
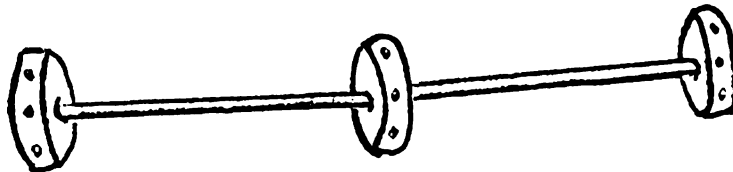
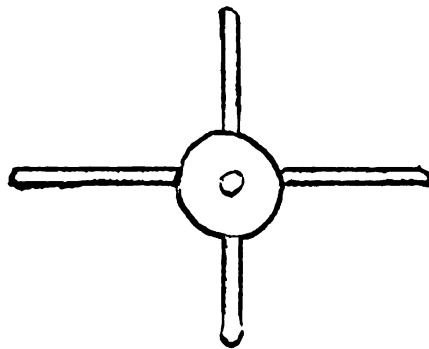
42. Simple construction



Design 1



Design 2



The other designs on this page are supplemental

gnizing missing parts from pictures.

STUDENT WILL BE ABLE TO LOCATE AND NAME THE MISSING PARTS FROM PICTURES.

Materials: a set of pictures with missing parts, a set of missing parts.

Procedures:

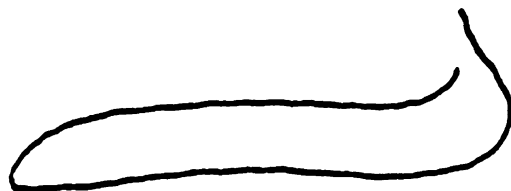
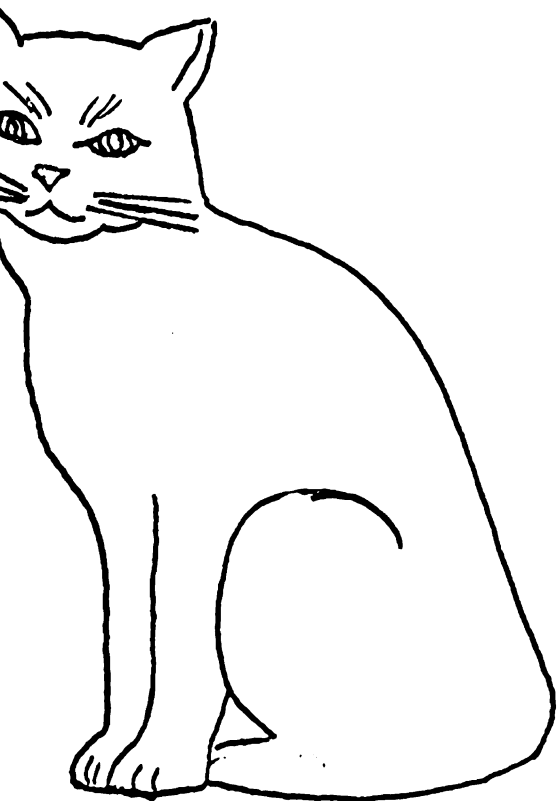
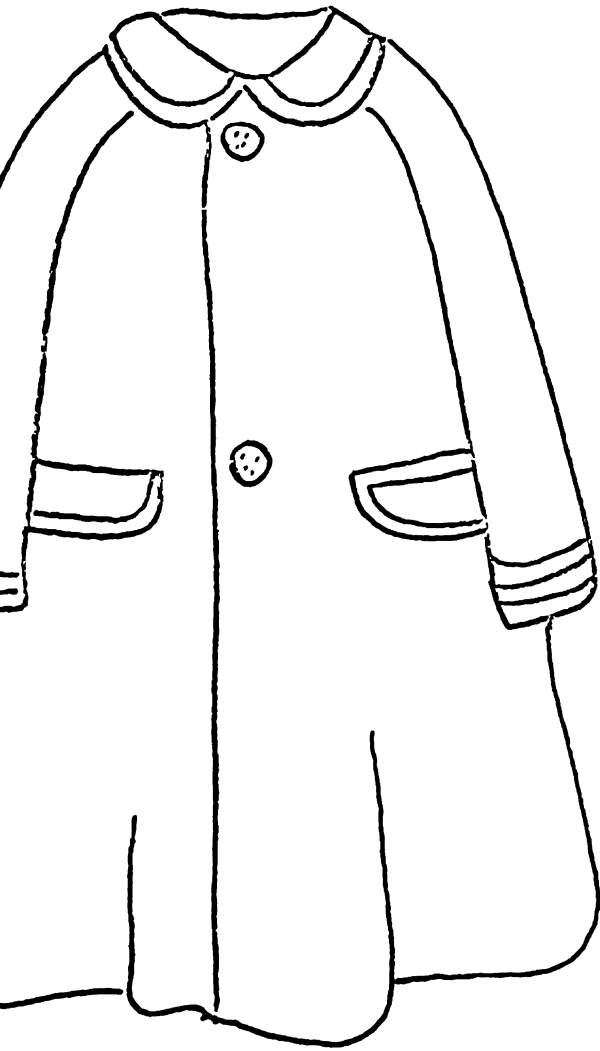
1. EXPLORATION: Give the student the set of pictures to look at. Observe if he is able to notice that a part is missing. If he is able to do this, omit this lesson.
2. IDENTITY: Present the student with a simple picture with a missing part. Show him what part is missing and why we know it's missing. Continue with two other pictures in the same way.
3. RECOGNITION:
 - a. Matching: Place five cards that give the missing parts before the student (e.g. wheel from a wagon, tail from a dog, etc.). Present the student with a card showing a missing part. Say to him, "What part here belongs in this picture?" The student is to find the part that is missing from the pictures presented on the table.

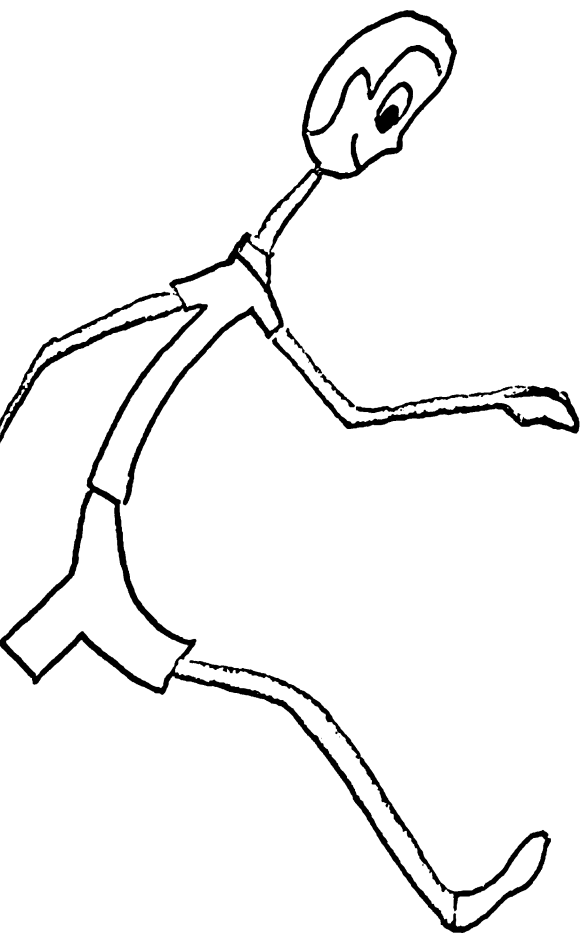
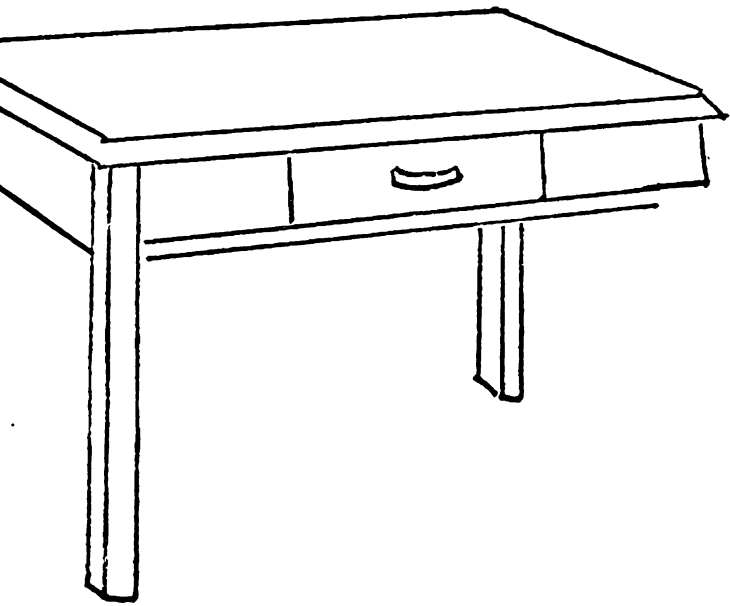
Alternative A: If a student has difficulty identifying the missing part, talk about the parts that a particular object has, look at a picture and see if all the parts talked about are present. If a student still has difficulty use a concrete object that has a missing part and see if the student can identify the missing part.
 - b. Finding: Present a new set of cards to the student. Say to him, "What part is missing?" The student points to the missing part. If he does not know the name of the missing part, supply the name for him. If he is able to name the missing part, omit the "recall" section of this lesson.
4. RECALL: Present a set of cards with missing parts. Say to the student, "Tell me what part is missing." The student is to name the

missing part. If he does not have expressive speech, let him act out or sign the part that is missing.

- C. Additional Activities: -present a picture with a part of it covered up and have the student tell you what is covered.

Missing parts of pictures







atching texture by touch alone.

STUDENT WILL BE ABLE TO MATCH FIVE TEXTURES AND IDENTIFY THEM
S ROUGH AND SMOOTH.

. Materials: two identical sets of five textures each.

. Procedures:

1. EXPLORATION: Give the student the five textures to explore. Encourage visual and tactual exploration.
2. IDENTITY: Present each texture to the student, discussing whether it is smooth or rough. Encourage further exploration.
3. RECOGNITION:
 - a. Matching: Blindfold the student (use a blindfold only if it does not distract the student). Place five textures on the table within his reach. Tell him to notice where they are. Then present him with one texture at a time saying, "Find one that feels like this." The student finds the identical texture and matches it. Continue with the rest of the textures.

Alternative A: If the student has difficulty with all five textures within his reach on the table, begin with matching of two very opposite ones. Gradually increase the number.

- b. Finding: With the student still blindfolded, place the five textures within his reach on the table and say, "Find a smooth one." "Find a rough one." Give the student time to locate the one requested.
4. RECALL: With blindfold off, present the student with a texture and ask, "Is this smooth or rough?" Student responds with the appropriate response.

Additional Activities: -encourage tactual exploration of objects, textures.
-locate different textures within the classroom. Identify them as rough or smooth.

Lotto

A STUDENT WILL BE ABLE TO PLAY THE GAME OF LOTTO WITH AT LEAST ONE OTHER STUDENT.

A. Materials: a simple lotto card with objects and the accompanying cards.

B. Procedures:

1. EXPLORATION: Place the large card before the student along with the small cards. If he independently matches the small cards with the appropriate picture on the large card, omit identity and matching items of this lesson.

2. IDENTITY: Place the large lotto card before the student. Identify the pictures on the card with the student. Make sure he knows each of the pictures.

3. RECOGNITION:

a. Matching: Place the large card before the student. Present him with one small card at a time and have him match the small card with the picture on the large card. Continue in the same way with all of the cards.

Variation: Give the student all of the small cards at a time and have him match them all independently.

Alternative A: If a student has difficulty matching the pictures, have him identify each picture on the small card before he looks for it on the large card.

b. Finding: Place the large card before the student. Present him with pictures that match with the card as well as pictures that do not match the card. See if he is able to indicate when a picture does not belong.

Variation: Give the student a pack of small cards to match. Have in the pack pictures that do match and pictures that do not match. Let him work independently. Tell him where to put the cards that do not belong.

Alternative A: Place the large card before the student. Present him with cards that do and do not match. Have the student vocally identify each picture, look for it on the large card, then decide whether it belongs.

4. RECALL: Set up a situation where two or three students can play the game of lotto. Follow the normal rules of the game. If a student is unable to follow the game when it is played with others, go back to some more dependent item of this lesson.

C. Additional Activities: -give the student opportunities to play various types of lotto games, gradually increasing in difficulty.

Discrimination of sound-matching sound blocks (high, low), (hard, soft)

A STUDENT WILL BE ABLE TO MATCH AND IDENTIFY FIVE SOUNDS

A. Materials: two sets of identical bottles with various types of noise making objects inside (rice, sand, popcorn, etc.)

3. Procedures:

1. EXPLORATION: Give the student the two identical sets of sound blocks. Observe if he notices them. If so, omit the item on matching in this lesson.
2. IDENTITY: Shake each item with the student. Find the boxes just like the one shaken. Tell the student that they sound the same. Shake them again so he can hear.
3. RECOGNITION:
 - a. Matching: Place the five boxes on the table. Give the student another box and say, "Find the one that sounds like this." The student matches the correct boxes.
 - b. Finding: The teacher gives two boxes to the student. The student is to shake them and tell whether they sound the same. Make sure some parts are the same and some are different.
4. RECALL: Have two students play the sound game together.

Recognition of things that go together (sock, shoe; bat, ball)

THE STUDENT WILL MATCH AND NAME OBJECTS THAT GO TOGETHER.

A. Materials: a set of cards that go together, with at least eight in the set.

B. Procedures:

1. EXPLORATION: Give the student the two sets of cards. Observe if he matches those that go together. If he does, omit the matching exercise in this lesson.

2. IDENTITY: Present the student with one card (bat), identify it. "This is a bat." Present him with a second card that goes with it. "This is a ball. They go together, we play with them together." Talk to the student about how a bat and ball go together. Continue with the rest of the cards.

3. RECOGNITION:

a. Matching: Place one set of cards before the student. Present him with one card from the second set saying, "Find the picture that goes with this." The student is to match the pictures that go together. Continue with the rest of the cards.

Variation: After the first set of cards are presented, give the student the entire second set and let him complete the task independently.

Alternative A: If a student has difficulty matching from so many choices, limit the number of cards used until he is able to handle more.

b. Finding: Place those cards from Set I and Set II before the student and say, "Find the two pictures that we use when we play ball." The student locates the bat and ball. Continue with the rest of the pictures.

Alternative A: If a student cannot locate two pictures out of a group, present him with only one set and ask for only one picture. "Find the picture that we use when we play ball." The student finds the ball.

Alternative B: If a student cannot locate two pictures from the total group of pictures, present him with either three or four pictures and ask him for two of them. (Here he is still locating two out of a smaller group.)

4. RECALL: Place two pictures that go together before the student and ask, "Why do these go together?" The student then responds with the reason. Some students may find this very difficult. Give clues if necessary and encourage his response.

- C. Additional Activities: -present the student with pictures that go together and have him match them independently.
-let him look for pictures in magazines that go together.

Building block designs from cards.

A STUDENT WILL BE ABLE TO BUILD BLOCK DESIGNS AS SHOWN ON CARDS.

- A. Materials: a set of blocks and a set of block design cards.

. Procedures:

1. EXPLORATION: Give the student a set of blocks. Observe if he stacks the blocks, sorts them according to color, etc.
2. IDENTITY: Place a two piece block design before the student. Talk about the block that is on the bottom, the block that is on the top. Show him how to build the design by looking at the cards.
3. RECOGNITION:
 - a. Matching: Place a simple three block design before the student and say, "Make your blocks look like this." The student stacks his blocks like those on the card. Continue with other simple three, four and five block designs. Color need not be followed.

Alternative A: If a student has difficulty copying a block design from a card, stack the blocks for him to see how you do it, then let him copy your build design.

Continue building designs until he has a facility in working from a concrete copy. Gradually introduce the cards again.

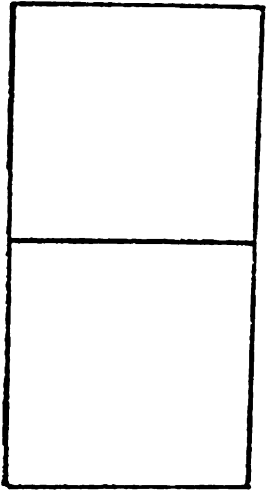
- b. Finding: Build a block design before the student. Show him two block design cards and have him find the card that is like the structure you built. Build another structure and have him locate the design from three design cards.

Alternative A: If a student has difficulty locating the correct card, point out the characteristics of the block design to him. Show him how the one is not alike, while the other is.

4. RECALL: Place block design cards before the student and say, "See if you can make your blocks look like this." Continue to increase the difficulty of the designs. (Observe the color in the design.)

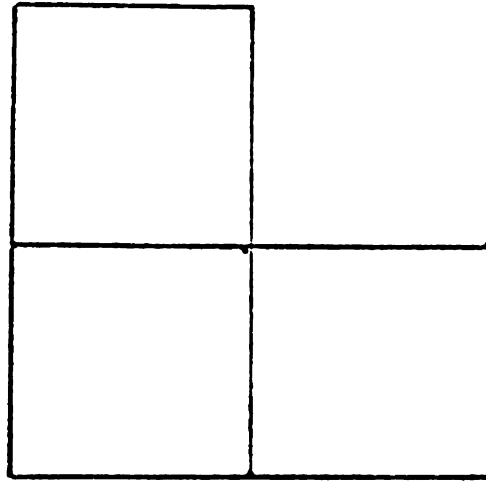
- C. Additional Activities: -give the student opportunities to copy other block design cards.
-let the students work together in building and checking the structure.

Building block designs from cards



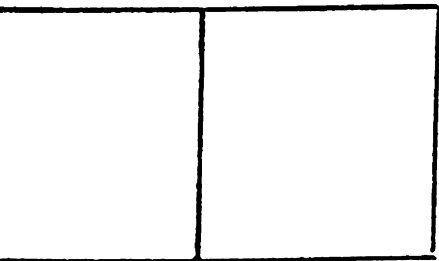
Design 1

(Blocks all one color)



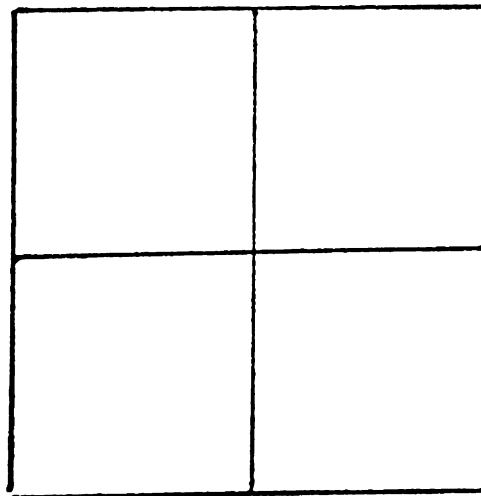
Design 2

(Blocks all one color)



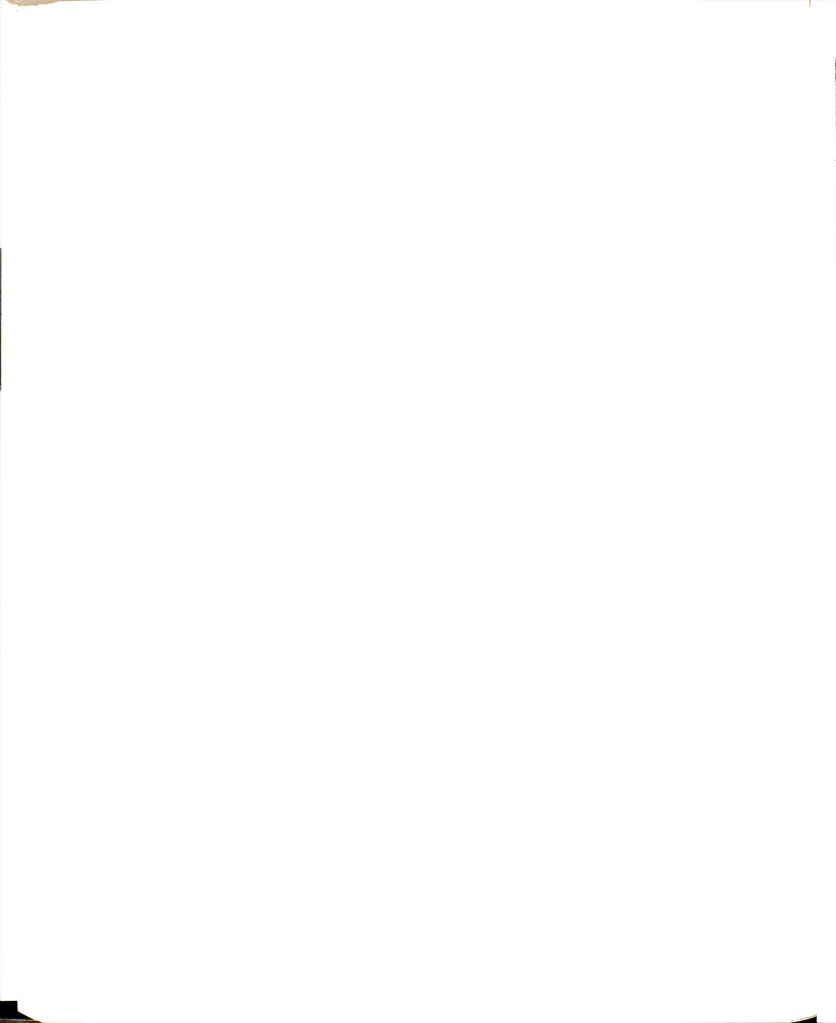
Design 3

(Blocks all one color)



Design 4

(Blocks all one color)



Design 5
(Blocks all one color)

yellow		yellow
red	red	red

Design 6

	black	
green	green	
orange	orange	orange

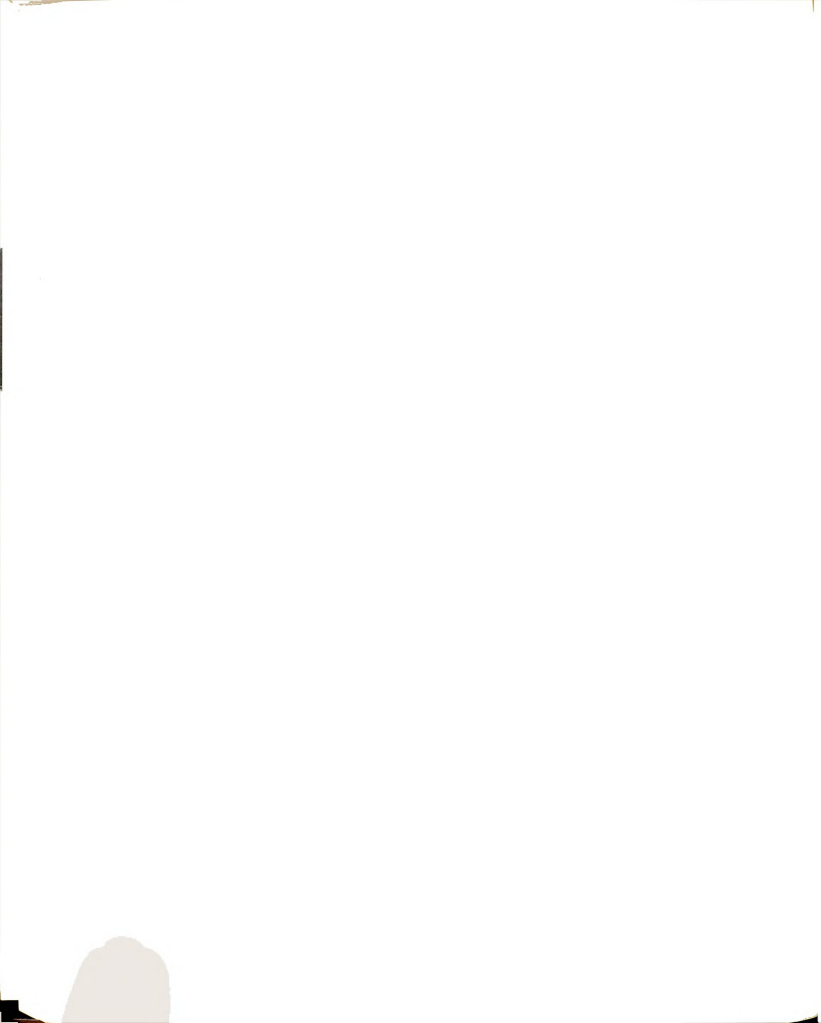
Design 7

white
brown
white
brown

Design 8

green			
green	white		
green	white	white	
green	green	green	green

Design 10



uencing according to a pattern (string beads)

N PRESENTED WITH A PATTERN, A STUDENT WILL BE ABLE TO STRING
DS IN THE GIVEN SEQUENCE.

Materials: a set of cards for each bead shape and color
in the set. Sets of bead patterns. A box of
beads.

Procedures:

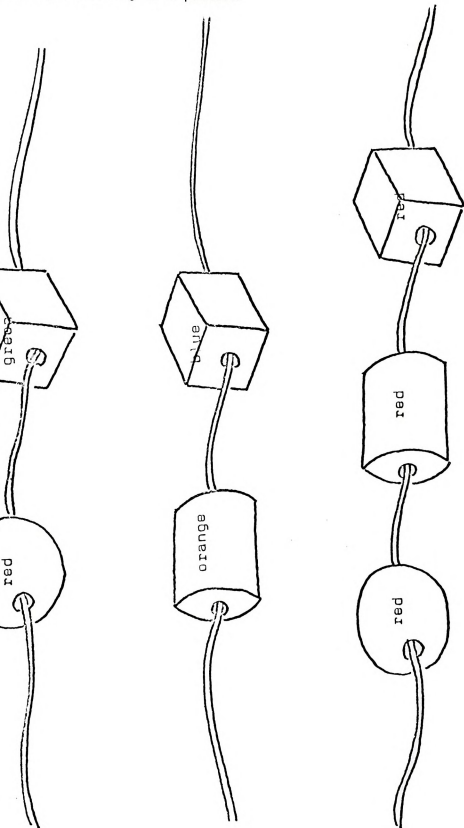
1. EXPLORATION: Give the student the set of beads and a string to string the beads. Observe if he strings them with any particular pattern in mind, or if he strings them at random.
2. IDENTITY: Present the student with a set of beads. Look at them noticing differences in color and shape. Place a card with a particular bead on it and ask the student to find the bead that is just like the picture (e.g. the round, red one), and place it on the card. Continue with the rest of the cards in the same way. Make the student aware of characteristics for which he is looking.
3. RECOGNITION:
 - a. Matching: Place a card with a two bead design on it. Say to the student, "Find these beads." The student matches the beads with the ones in the design. Continue with the two, three and four bead designs. At this time the student does not have to string the beads, only locate the ones like those in the picture, and place them in order.
 - b. Finding: Place a two bead design card before the student. Say to him, "Find these beads and put them on this string so they look like this." The student is to string the beads like the design. Move only as fast as the student is able to move to the three, and four and five bead designs. If he makes an error, point out to him why it is not like those on the card.

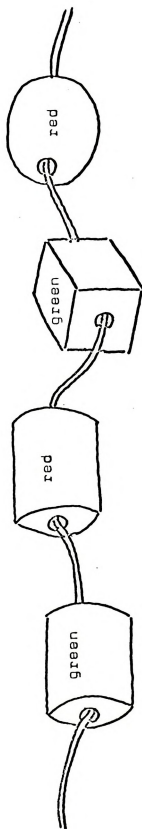
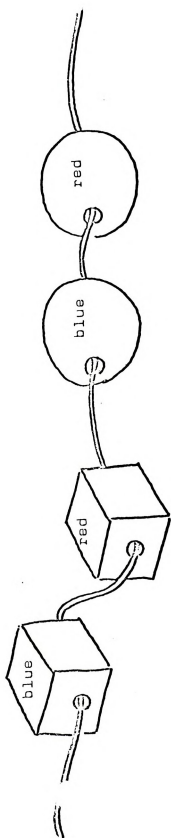
Alternative A: If a student has difficulty following a bead design on a card, string a set of beads for him to follow. Gradually show him the way you strung the beads is like the card.

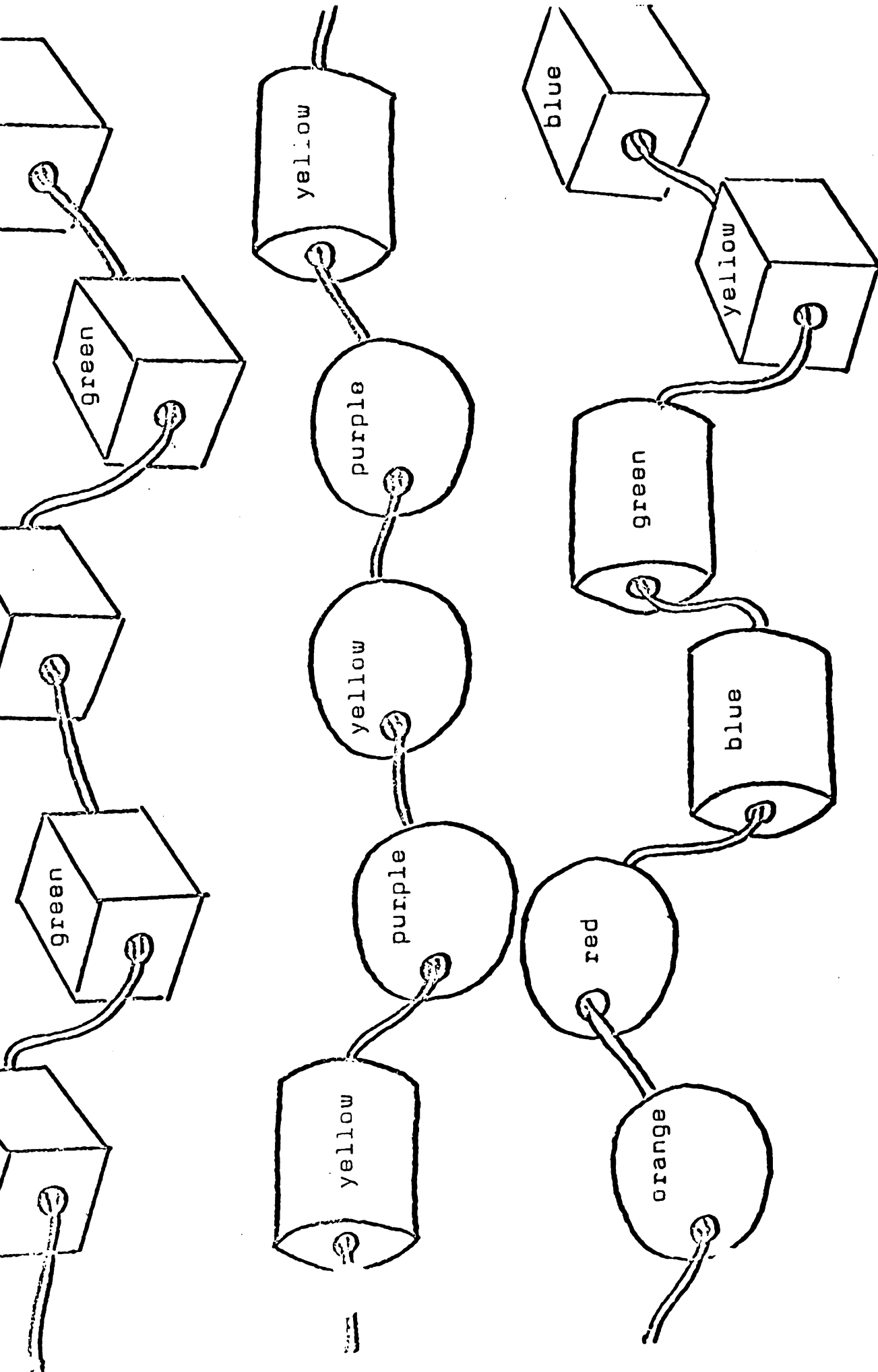
4. RECALL: Place a set of beads before the student and some card designs. Let him independently string the beads according to the cards. Let him pick out the cards he wants to do. (In time he will end up doing all of them.)

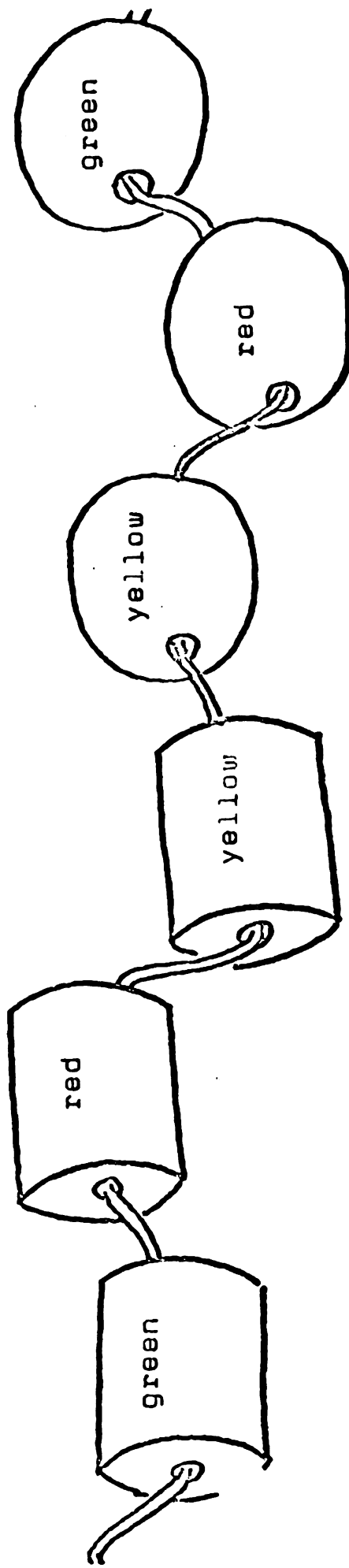
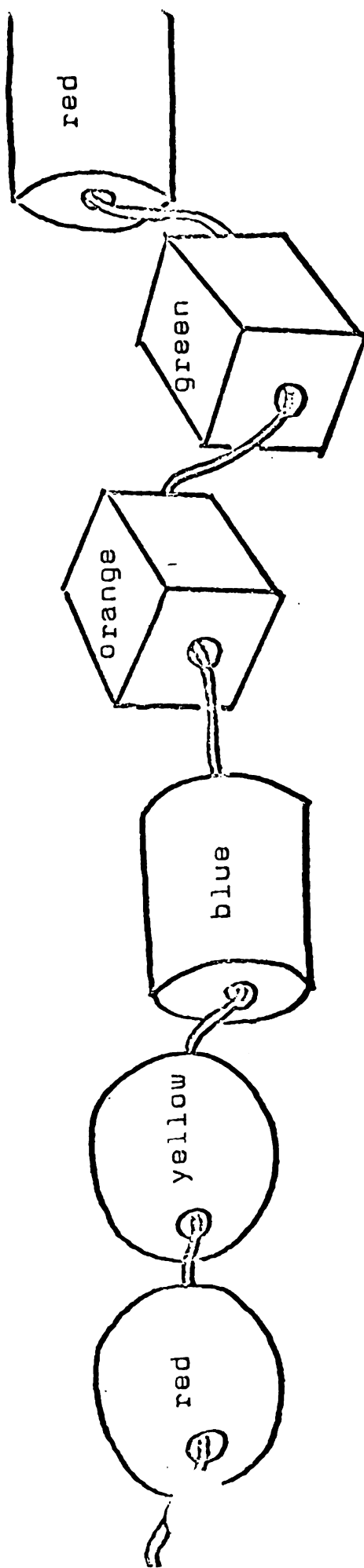
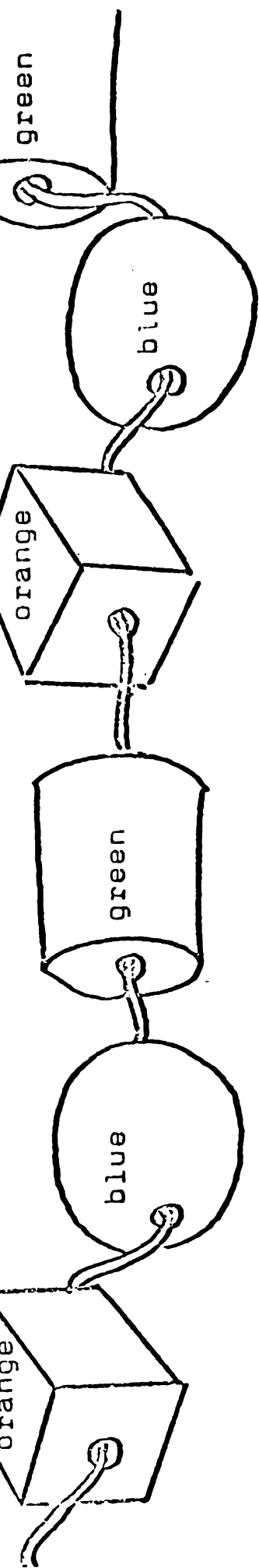
. Additional Activities: -provide many opportunities for the student to string beads
-let one student make a design on a string and another student copy it. The first student can check it and see if it is like the one that he did.

uencing according to a pattern









tial relationships (four and five piece puzzle)

TUDENT WILL ASSEMBLE AN OBJECT THAT HAS BEEN CUT INTO FOUR FIVE PIECES.

Materials: A complete picture of an apple and an animal.
A cut picture of an apple and an animal.

Procedures:

1. EXPLORATION: Place the two sets of uncut pictures before the student and then the same picture cut into four and five pieces. Observe what the student does with the pieces. If the student assembles the two pictures, skip the matching item in this lesson.
2. IDENTITY: Place the picture of the apple before the student. Review with the student the object in the picture. Place the four pieces of the apple before the student, show him how the pieces fit together to form the same picture as the uncut one. Follow the same procedure with the animal picture.
3. RECOGNITION:
 - a. Matching: Place the complete picture before the student. Then give him the cut picture and say, "Make a picture like this from these pieces." The student assembles the picture. Follow the same procedure with the animal picture.

Alternative A: If a student has difficulty assembling the pieces, help him to arrange the pieces and look for cues in the pieces. Let him work on just one picture until he understands what he is doing.
 - b. Finding: Place the two complete pictures before the student. Present him with one piece at a time and say, "What picture does this go with?" The student is to find the large picture that the small piece is a part of. Continue until all of the pieces are matched with the correct picture. (Here we are again checking for knowledge of wholes and parts.)

Variation: Place the two uncut pictures before the student. Present him with all of the cut pieces and say, "Put each piece

with the picture with which it goes." The student then matches the piece with the whole pictures.

4. RECALL: Place the four pieces of the apple before the student and say, "Put this together to make a picture." The student assembles the picture without looking at the model. Continue with the second puzzle in the same way.

Variation: Place all of the pieces of both puzzles before the student and say, "Put these together to make two pictures." The student completes both pictures independently.

Additional Activities: -give the student many insert puzzles to assemble.

Cognition of color (black, brown, white, orange, purple)

STUDENT WILL MATCH, FIND AND NAME THE COLORS BLACK, BROWN, WHITE, ORANGE AND PURPLE.

Materials: two sets of cubes, each set containing the colors: black, brown, orange, white, purple.

Procedures:

1. EXPLORATION: Give the student the two sets of cubes. Let him manipulate them. Observe if he groups them according to color. If he does, omit the matching exercise of this lesson.
2. IDENTITY: Present the student with one cube at a time saying, "This is _____ (black, brown, purple, orange, white)." Allow the student time to repeat the name. Continue with all of the cubes.
3. RECOGNITION:
 - a. Matching: Place one set of cubes before the student. Hand him one cube at a time from set II. Say to him, "Find one like this." The student is to match the cubes by color.

Variation: Place one set of cubes before the student. Hand him all of set II saying, "Find one like each one of these." The

student is to continue the task without further prompting from the teacher.

Alternative A: If a student has difficulty matching five different colors, present him with three colors at a time gradually working up to all five colors.

- b. Finding: Place the objects from one set before the student. Say to him, "Find the (black, brown, orange, purple, white) one." The student is to pick up the appropriate color and place in the designated tray. After each color is placed in the tray, remove it and put it back in the set of cubes. (This is to insure that the student is discriminating one color from a group of five colors.)

Alternative A: If a student is having difficulty finding the requested colors, begin with two colors only. Have him find one color out of a group of two. Gradually increase the number of choices.

Alternative B: If a student cannot find the designated color because he does not know the color, go back to the "Identity" section of this lesson and present him with one color at a time, naming it, having the student repeat the name. Have the student locate the one known color from a group of two.

4. RECALL: Place one colored cube before the student. Say to him, "What color is this?" The student names the color or gives a close verbal approximation.

Variation: Place all of the cubes in front of the student. Point to one cube at a time saying, "What color is this?"

Additional Activities: -provide sorting by color tasks.

cognition of objects (pictures) that do not belong

STUDENT WILL BE ABLE TO IDENTIFY IN A GROUP OF PICTURES THE
E THAT DOES NOT BELONG.

Materials: a set of pictures of: food, clothing, furniture, toys, animals, people; at least five cards in each set.

B. Procedures:

1. **EXPLORATION:** Give the student two sets of cards to explore. Observe if he matches the pictures of the same category.

2. **IDENTITY:** Present the student with one set of pictures at a time. Talk about each picture, and why each picture is in that particular set. Continue with each set.

Alternative A: You may want to begin with just two sets and follow the format of this entire lesson with just those two sets, then begin again with a new group of two sets until all of the sets are identified and worked with.

3. **RECOGNITION:**

- a. **Matching:** Place one card before the student from each set. Give the student one card at a time and have him match that card to the set in which it belongs. Continue with all of the cards.

Variation: After the process is explained, give the student the entire set of cards and have him match them all independently.

Alternative A: Begin with only two or three sets for the student to sort.

- b. **Finding:** Place five cards before the student, four of the cards going together, one card that does not belong and say, "Find the picture that does not belong." The student locates the card that does not belong with that set. Continue with another set until all sets are used.

4. **RECALL:** Place five cards before the student, four of the same set, one that does not belong. The teacher locates the card that does not belong and says, "Why doesn't this card go here?" The student is to give the reason why it should not be included.

Alternative A: If a student has difficulty with the reason, help him see why it doesn't belong.

- C. Additional Activities: -give additional exercises in locating pictures that do not belong.

3. Graduated symbols

A STUDENT WILL BE ABLE TO ARRANGE ACCORDING TO SIZE GRADUATED CIRCLES.

A. Materials: two identical sets of circles, five in a set.

B. Procedures:

1. EXPLORATION: Give the student one set of circles to explore. Observe if he is able to place them according to size. If so, omit this lesson.
2. IDENTITY: Present the student with one circle at a time beginning with the largest. Talk about the characteristics of the circle. The size in comparison to other ones. As each one is presented, place it in line to show how each circle gets smaller.

3. RECOGNITION:

- a. Matching: Place one set of circles, in order, before the student. Present him with one card at a time and say, "Find the one that is the same size as this one." The student places it below the one that is the same.

Alternative A: If a student has difficulty matching the circles according to size, begin with just two circles--the largest one and a middle one. As he is able to match those two sizes, gradually add the smallest circle. Gradually add one circle at a time until he is able to discriminate all five circles.

- b. Finding: Place a set of circles, in order, before the student. Hold up one card at a time from the second set saying, "Find one that is the same size as this." The student points to the circle in the line that is the same size. Do not place the card on the table to match.

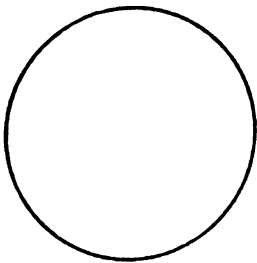
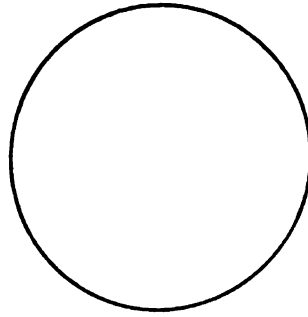
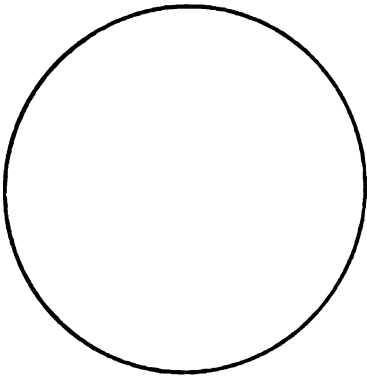
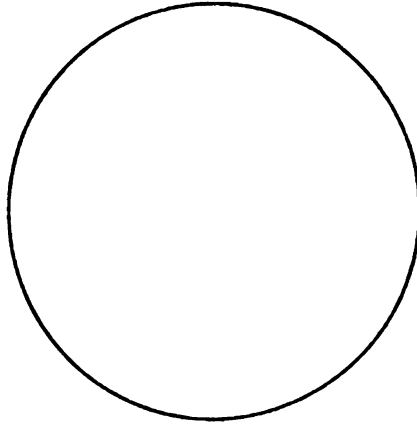
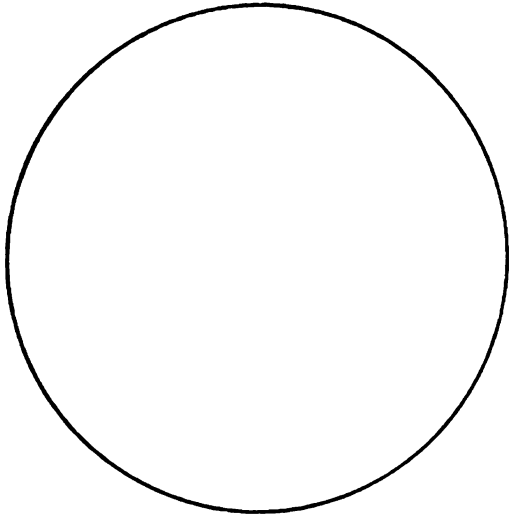
Alternative A: If a student has difficulty finding the requested circle out of the group

of five, limit the number to three, gradually increasing the number as the student progresses.

4. RECALL:

Place all of the circles before the student in random order. Place the largest circle before him and say, "Put all of these circles in order. Go from big to small." Allow the student to work independently.

3. Graduated symbols



54. Grading--(long, short) using three/four sizes.

GIVEN FOUR STICKS A STUDENT WILL ARRANGE THEM ACCORDING TO SIZE.

A. Materials: two identical sets of sticks, two, four, six and eight inches in length.

B. Procedures:

1. EXPLORATION: Give the student the two sets of sticks. Observe if he matches the sizes or arranges them according to size. If he is able to do any of that, omit that portion of this lesson.
2. IDENTITY: Place the long stick before the student and say, "This is a long stick." Place the short stick before the student and say, "This is a short stick." Review long and short. Make sure he sees the difference. Then place a third stick before the student, "This is a middle size stick." "See, it's smaller than the long stick and longer than the short stick." Let the student see the difference, feel the difference. Then introduce the fourth stick saying, "Where will this one go?" (the sticks have been arranged according to size on the table). Show him that it is larger than some of the sticks and shorter than others. After the sticks are all arranged in order, talk about the order. Make sure the student notices the sticks getting bigger or smaller.
3. RECOGNITION:
 - a. Matching: Place the four sticks before the student in size order. Hand him one stick and say, "Find one like this." The student is to find the one that is the same size. Continue with the rest of the sticks.

Variation: After the sticks are placed on the table, hand the complete second set to the student and say, "Place each stick near one just like it." If a student is able to do this task, take the four sticks from the table, present him with the other set of four sticks and say, "Put these sticks in order from long to short."

Alternative A: If a student has difficulty matching all four sticks, place just two before him, the longest and the shortest one. Have him match those. Gradually increase the number of sticks used, until he is able to match all four.

Alternative B: If a student still has difficulty matching the same size sticks, place each stick on the table, below it place a card the same length as the stick. Have the student place the correct stick on the card.

Alternative C: If a student is still having difficulty refer back to Lesson 10, "Recognition of size."

- b. Finding: Place the four sticks in size order before the student and say, "Find the long stick." "Find the short stick." "Find the middle size sticks." The student points to the appropriate stick each time.

Alternative A: If a student has difficulty locating the requested stick, go back and review "Identity."

4. RECALL: Place the four sticks before the student and say, "Place these sticks in order." The student is to place the four sticks in size order. After the sticks are arranged point to each one of the sticks and say, "What size is this?" The student is to respond with the name, "long," "short," or "or middle-size."

- C. Additional Activities: -give the student sticks that are more similar in size to place according to size
-sort sticks according to size. Tinker toy sticks work very well. Give the student two tinker toy spools and say, "Place all the little sticks in here, put all the big sticks in here."
"Now you have a big flower and a small flower."

55. Spatial relationships

A STUDENT WILL BE ABLE TO ASSEMBLE FROM PARTS TO WHOLE A CIRCLE CUT IN HALF AND A CIRCLE CUT IN QUARTERS.

A. Materials: two sets of each form; a circle cut in half, a circle cut in quarters.

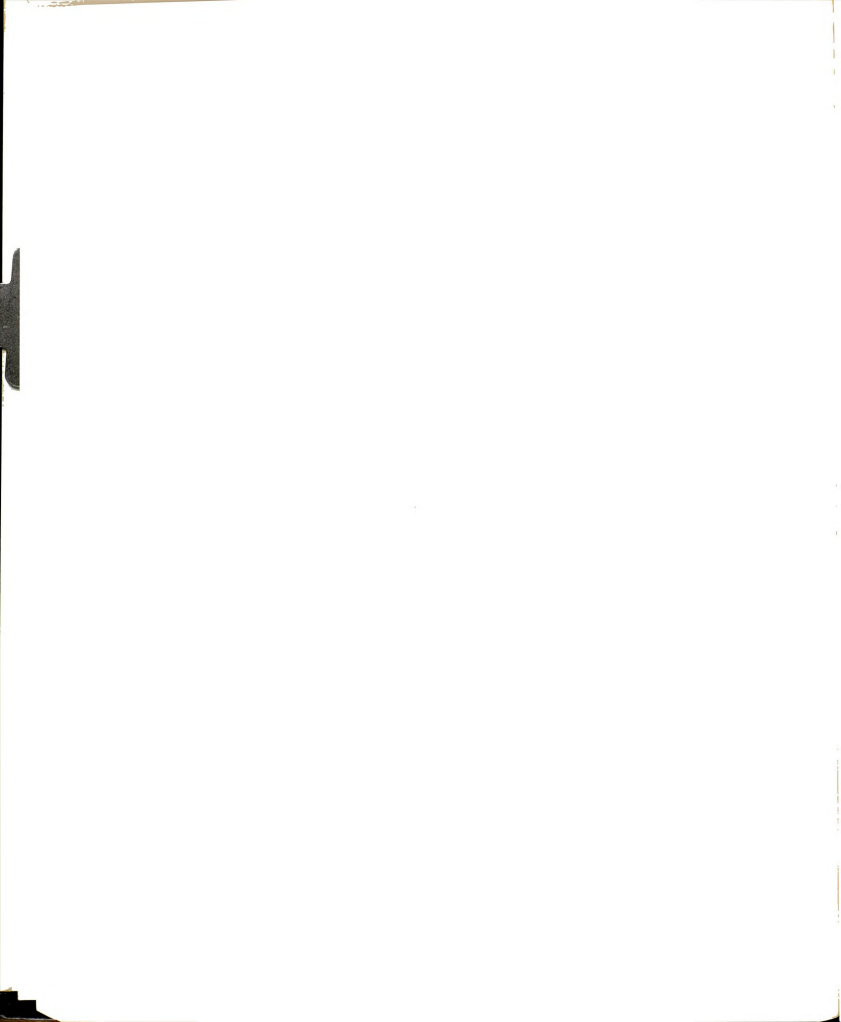
B. Procedures:

1. EXPLORATION: Give the student the two half pieces and the four quarter pieces. Observe whether the student puts the parts together.
2. IDENTITY: Place each form in front of the student, showing him the parts go together to form a whole. Point out the differences in size and shape.
3. RECOGNITION:
 - a. Matching: Place one part of each form before the student. Present him with one piece at a time saying, "Find one like this." The student finds the part identical in size and shape to the part presented.
 - b. Finding: The teacher places before the student a completed form and says, "Find the parts that make this." The student locates the parts from his set of shapes and makes a form identical to that presented. Continue with the second form.

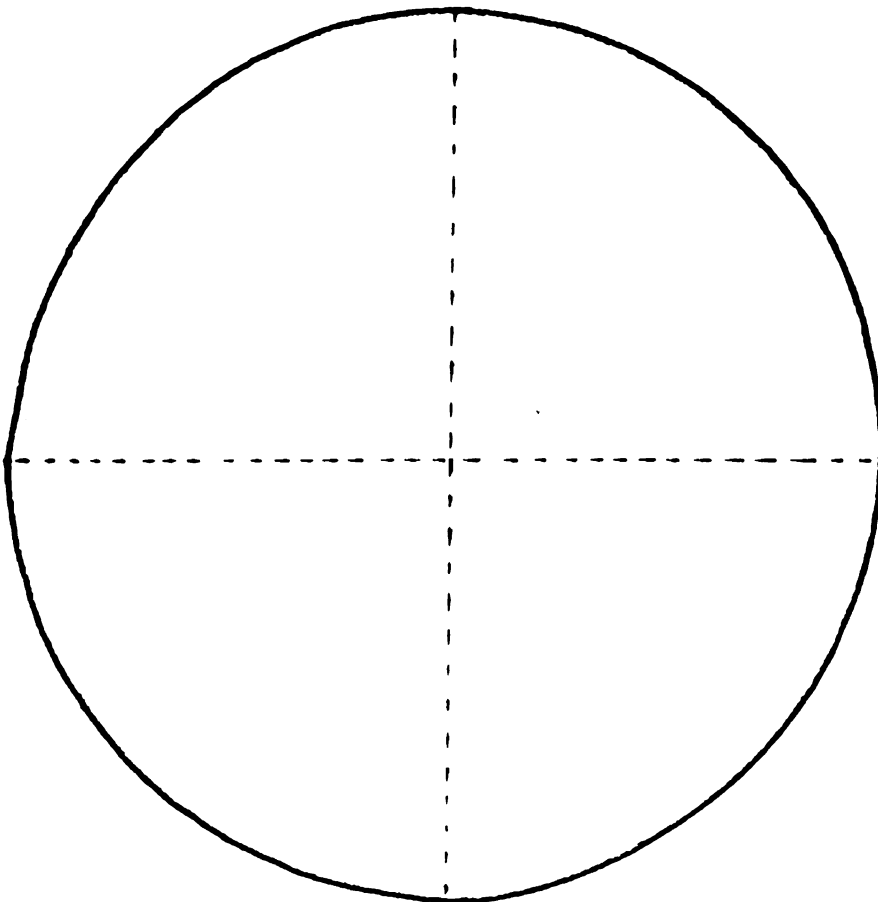
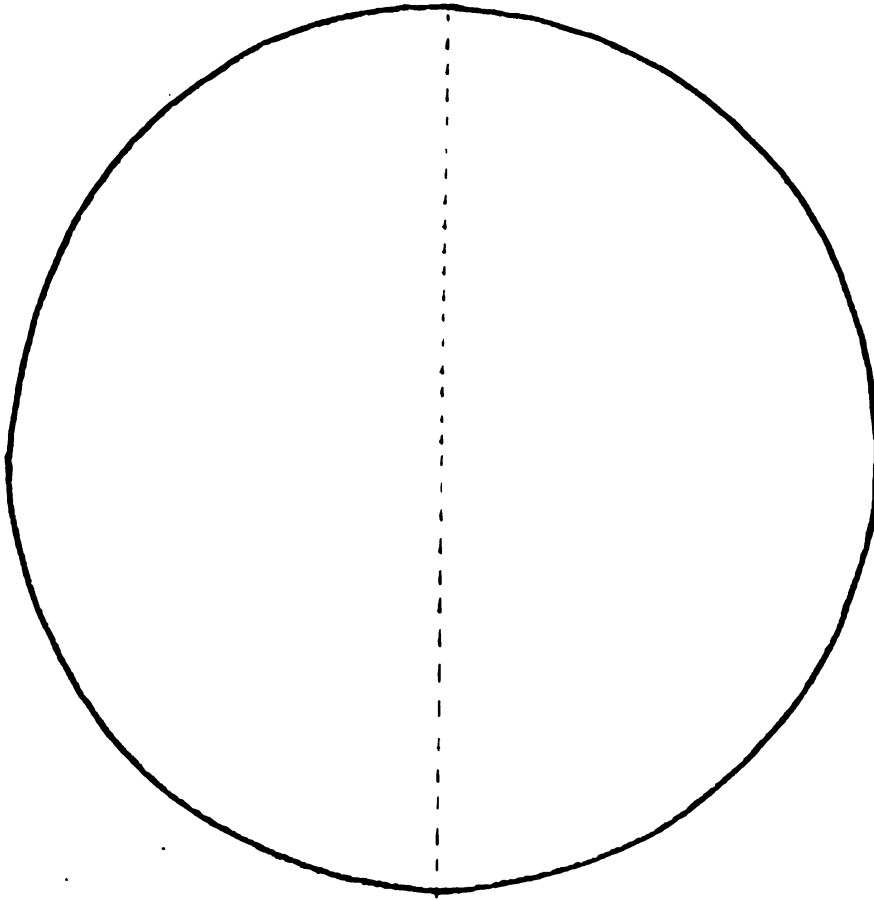
Alternative A: If a student has difficulty finding the appropriate shapes, present the form (the two half circles to make a whole circle) talk to the student about the parts, work with him to find the parts that make a whole.

4. RECALL: Place all six pieces before the student. Say to him, "Put these together." The student places all six parts to make two forms.

C. Additional Activities: -simple two, three and four piece puzzles.



55. Spatial relationships



CHAPTER V

REVIEW OF THE STUDY

There has existed a need for further development in curricular programming for moderately and severely retarded persons. This study was designed to create and refine material that would provide a curriculum base, including assessment, instructions and materials, and lessons for carrying out a sequential program in readiness skills preceding functional academics.

This was accomplished by identifying the population for the study and examining programs currently available to teachers working with moderately and severely retarded students. From this base was developed a sequence of skills important in readying a student for functional academics. From the list of skill areas a method of instruction and assessment was determined.

Following the writing of the initial program, a research population was selected to take part in a pilot study to determine the appropriate sequencing of the skills. Once the skills were ordered a field study was undertaken to test the feasibility of the proposed methodology as well as the assessment format in the instruction of moderately and severely retarded students.

Preceding both the pilot study and the field test, inservice was provided to the participating staff. Both investigations were

concluded with the staff critiquing the procedures and materials used. This feedback formed the basis for the revision and the adaptation of the program.

The resulting curricular program consists of 55 sessions with each lesson divided into four parts and an assessment instrument to determine the level of the student's skills prior to instruction. The assessment can also be used as a "post test" to determine accomplishment of the skills taught.

Priority Considerations

Resulting from this study, six areas emerge as vital to anyone considering a like undertaking.

Administrative Commitment

Paramount to a study like this is the absolute necessity for administrative commitment. A program is as successful as its administrator. Staff may have enthusiasm for a program, believe that is important in the education/treatment of their students, but if the administrator does not hold the same feelings, the teachers soon begin to doubt their own, or, because of lack of support, soon give it up in a "why bother" attitude. The administrator keeps enthusiasm and morale fired. When the administrator is not the project director a person must be designated as such. The Project Director assumes the leadership in carrying out the study in its various locations.

Staff Orientation

Once the commitment of the administration is obtained, a like commitment must be forthcoming in the staff. Most teachers will give

their energy to something they believe in. Some lacking enthusiasm at the beginning of the project may become ignited during the course of its study. However, this is not to be depended upon. It is better to involve staff at the beginning who are really interested in the program, rather than hope for an attitude that may never appear.

Knowledge of the theoretical base is very important for the staff to ensure continuance of the program in the absence of the Project Director or when the formal research is completed.

Pilot Study

Critical to any project is a pilot study. Such a study identifies a number of things that will be important to the total project. Because the pilot study usually consists of fewer members than a total field test, it is easier to (1) identify areas of weakness and strength; (2) to identify in more detail important characteristics of the target population; (3) to monitor more closely the staff involved; (4) to determine the feasibility of involvement with a larger group; and (5) to work out the areas needing improvement within the total project.

Time Line

For a project such as this a time line needs to be determined at the beginning of the study as well as the responsibilities of the members involved. A project without that structure will seldom move. To commit oneself and the staff to deadlines insures action. Within a time frame various areas must be considered: development of the product, test, site negotiations, staff training, pilot study,

Feedback, field test, evaluation and implementation. Adequate time must be given to detailed planning, clear communication and necessary follow-up.

Mechanism for Feedback

To reap the optimum results from a pilot test or field test mechanism for feedback must be determined, i.e. how to get back to the project leader the feelings and findings the staff have. Such mechanism would include: site visits by the author, teacher interview and opinions, student interview (where possible), teacher data sheets, teacher interest, and student interest. Monitored teaching should be one of the instruments used to assess the program.

Evaluation

All programs need some form of evaluation. In a program such as was proposed here two types will eventually be employed, i.e. formative and summative. At this time only formative evaluation is used, that is, the assessment of each step in development to determine the effectiveness of content, format and materials, and maintain the feedback necessary to revise and refine the curriculum. Summative evaluation, on the other hand, is the final testing of a curriculum in the educational environment.

Recommendation for Further Development

Further development of this curriculum for moderately and severely retarded students will need to focus on some specified areas. It is recommended that:

1. Focus be directed to the development of higher level skills that demand semi-abstract and abstract thought.
2. Each lesson be expanded to include more informal conversation between student and teacher.
3. More specific examples of ways in which the lessons can generalize the concepts being taught.
4. A variation of approach be introduced in which a teacher could take a more creative approach to the subject matter for those students who do not need the tight, structural approach.
5. As the curriculum further develops appropriate, high-interest, manipulative materials need to be retained in its structure.

The skills identified for this study are the basis for functional academics as well as preparation for placement in a work activities program. They involved gross to fine recognition and discrimination skills along with memory and spatial orientation, all of which are necessary in an academic or prevocational setting.

It is also felt that the program will stimulate overall growth in receptive and expressive language. It is hoped that with an extension of the instructional program, language concepts will be further generalized. It remains for further research to advance knowledge about the effectiveness of the program. It should be effective in stimulating general growth in language, cognitive processes and basic manipulative skills.

APPENDICES

APPENDIX A

CURRENT PROGRAMS

APPENDIX A

CURRENT PROGRAMS

<u>Name</u>	<u>Content Areas</u>	<u>Approach</u>
Adams (1975)	language, pre-academics, self help	List of objectives
Allegheny (1976)	ADL, communication, gross motor, fine motor, personal-social, visual skill dev., auditory training	Task analysis
Bensberg (1965)	language, motor, self-care	Suggested activities
Cline (1971)	self-help, feeding, dressing, toilet training	Task analysis
Cline (1974)	motor, social, cognitive, vision, hearing	Developmental model with suggested act.
Connor (1970)	motor, emotional, social, intellectual, imaginative and creative, manipulative, self-help	Task analysis on a five level continuum
Corvallis (1972)	independent living skills, communication, physical dev.	Task analysis
D'Eugenio (1976)	language, gross motor, social, fine motor and perceptual, cognitive, self-care	Assessment/Objectives
Fisher (1975)	communication, social, self-help, ADL, leisure	--
Gurzburg (1969)	occupational, communication, social, self-help	--
Hart (1974)	communication, motor, adaptive, self-care	Task analysis

<u>Name</u>	<u>Content Areas</u>	<u>Approach</u>
Ingham (1976)	vocational, personal, verbal, physical, social, conceptual, perceptual, recreational	Competency based objectives
Iowa (no date)	vocational, social-emotional, academic, enrichment	--
ISMRRD (1976)	language, gross motor, social, fine motor, cognitive, self- care	Objectives
Linde (1973)	language, motor, perception, self-help	Suggested activities
Michigan State (1974)	reasoning and problem solving, self-help, motor, language	Assessment/task analysis
Molloy (1972)	physical, emotional, social, intellectual, aesthetic	Unit approach
North Carolina (1972)	ADL, communication, motor development, social, self- help, cultural arts	Outline
Oakland (1976)	language, gross motor, fine motor	Competency based objectives
Oklahoma (1974)	ADL, language, physical educa- tion, social adjustment, number concepts, self-care, music and art therapy	Outline
Oakland Training Institute (1972)	language, physical education, social, manipulative	Task analysis/ Suggested activities
Packman (1974)	language, motor, social, practical knowledge, self-help	Task analysis/Behavior modification
Portage (1972)	cognitive, self-help, motor, language, social	Developmental model with competency based objectives
Program Panel (1968)	communication, social, self- care	--
Scheerenberger (1969)	communication, self-help, art, music	Suggested activities

<u>Name</u>	<u>Content Areas</u>	<u>Approach</u>
Schirmer (1974)	language, gross motor, social, fine motor, cognitive, self- care	Behavioral Objectives
Virginia (1973)	physical, social, emotional, intellectual	Suggested activities
Watson (1969)	language, self-care	Behavior modification
Wisconsin (1975)	mobility, vocational, ADL, safety, communication, motor, social, self-care, health, art and music, leisure	Task analysis with competency based

APPENDIX B

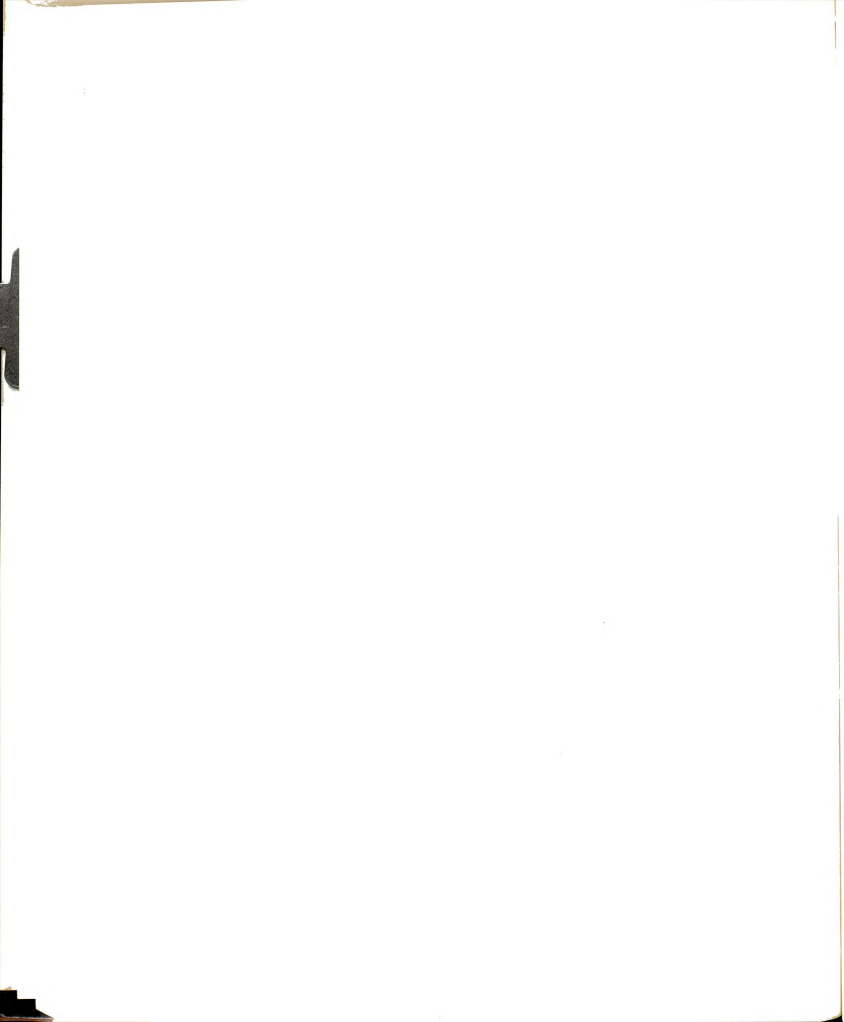
ORIGINAL SEQUENCE OF SKILLS

APPENDIX B

ORIGINAL SEQUENCE OF SKILLS

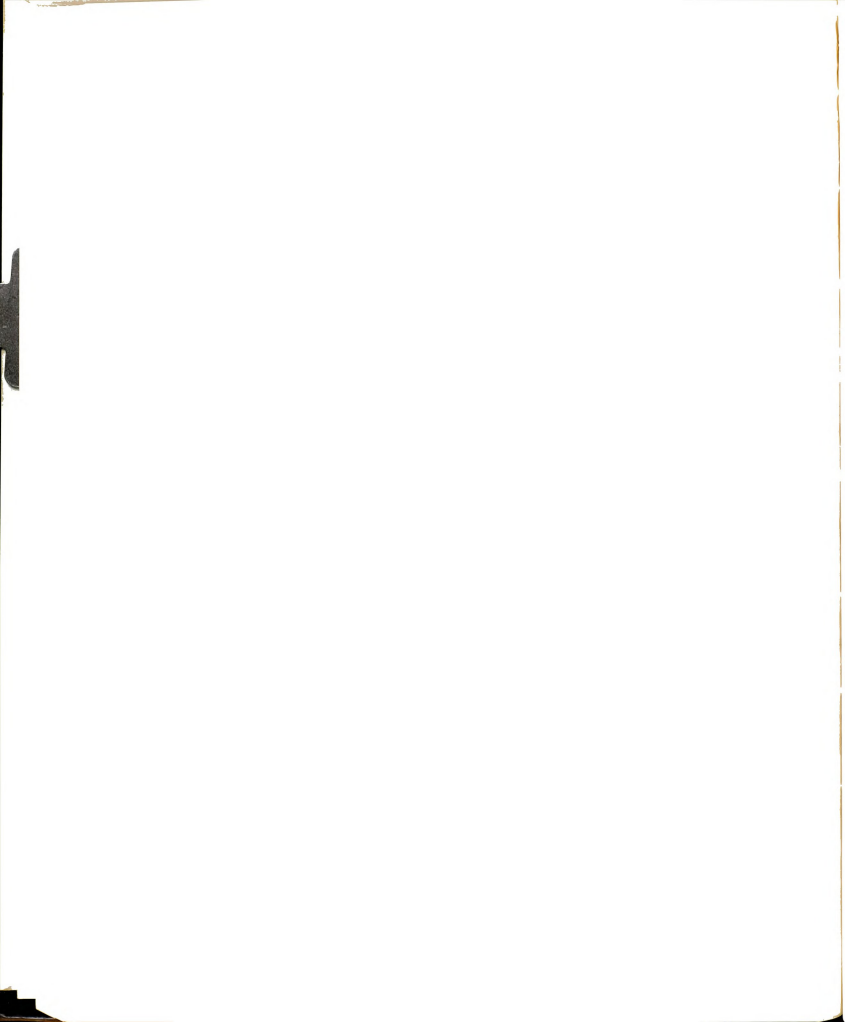
- A. Basic Concept Development (Developing awareness of basic characteristics of objects)
1. Recognition of common objects
 2. Recognition of common objects according to function
 3. Recognition of size (large, small) all qualities constant except size
 4. Recognition of body parts (self, doll)
 5. Recall of missing objects from memory
 6. Recognition of colors (red, blue, green, yellow)
 7. Amount concept 1-1 correspondence
 8. Discrimination of sound making objects
 9. Discrimination/recognition of size (long, short)
 10. Discrimination/recognition of texture (rough, smooth)
 11. Spatial relationships
 12. Concept of one (one, more than one)
 13. Discrimination of taste (sweet, sour)
 14. Recognition of objects in pictures
 15. Recognition of shape (circle, square, triangle)
 16. Recognition of size of shape (large, small--circle, square, triangle)
 17. Recognition of clothing

18. Discrimination of smell
19. Recognition of food
- B. Attention Training--Attending to important characteristics of an object.
 1. Recognition of size (big, middle size, small)
 2. Discrimination of sound-making objects (hand bell, music box)
 3. Amount concept--two
 4. Recognition of color (black, brown, white, orange, purple)
 5. Spatial relationships
 6. Recognition of difference (which one is NOT...)
 7. Discrimination of different
 8. Recognition of similar objects in pictures (different kinds of glasses, etc.)
 9. Amount concept--three
 10. Sorting gross objects (cubes, animals)
 11. Recall of missing picture from memory
 12. Recognition of action in picture
 13. Matching texture by touch alone
 14. Spatial relationships (one and two piece puzzles)
 15. Preposition directions (on, under, in)
 16. Recall of missing shape from memory
 17. Discrimination of unfamiliar symbols
 18. Copy block design from a structure
 19. Recognition of parts of objects (wheel from a car)
 20. Simple construction (tinker toys)
 21. Recognizing parquetry shapes (use of outline sheets)



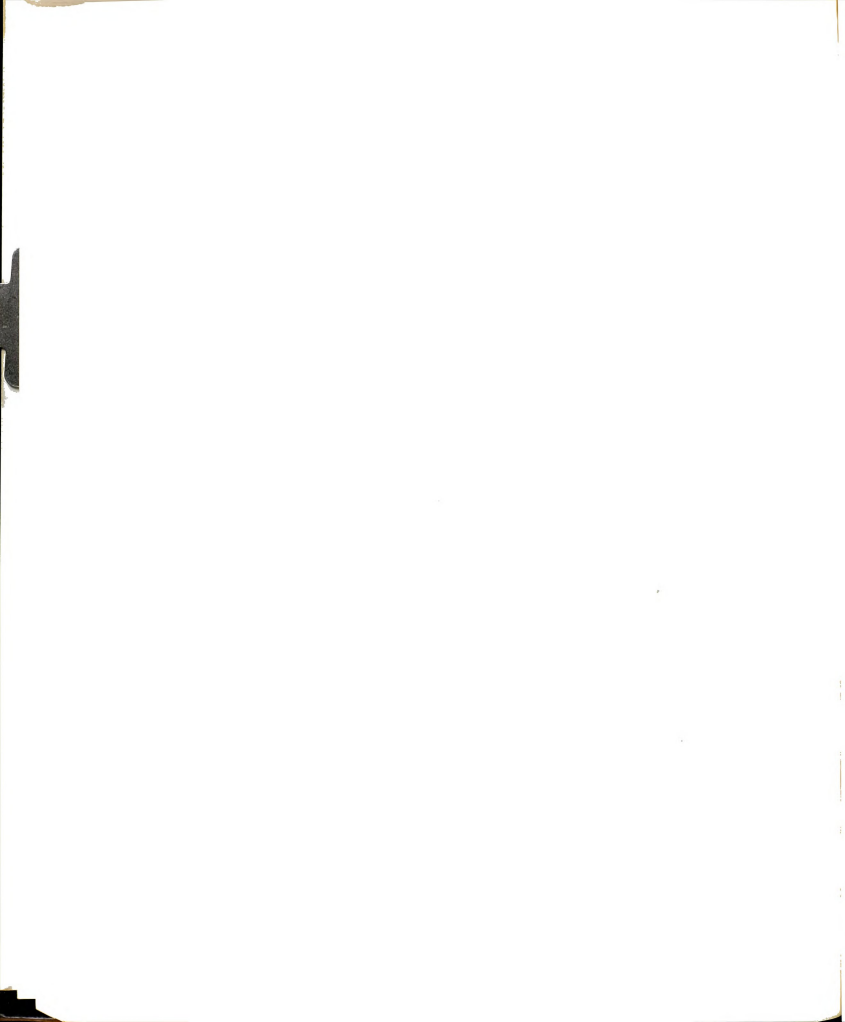
Classification--Recognizing important characteristics of an object, finding such characteristics in other objects.

1. Recognition of objects in pictures according to function
2. Recognition of things that go together (shoe, sock)
3. Recognition of graded sizes (pegboard)
4. Recognition of objects (pictures) that do not belong (all things we eat except...)
5. Matching sounds
6. Grading (long, short) 3, 4
7. Recognition of multiple textures (sandpaper)
8. Separating a stated number of objects from a group (1, 2)
9. Spatial relationships (three and four piece puzzles)
10. Stacking according to size
11. Recognition of various sounds
12. Sorting color (form constant, color varies)
13. Lotto--recognizing pictures
14. Sorting form (color constant, form varies)
15. Graded shapes
16. Sequencing according to a pattern (bead stringing)
17. Build block designs from cards
18. Recognizing missing parts from pictures.



APPENDIX C

FEEDBACK SHEET



FEEDBACK SHEET

Number	Asst./Tr.	Type of Problem (materials, pro- cedure, sequence, method)	Description	Suggestions

APPENDIX D

REVISED SKILLS AND CORROBORATION

REVISED SKILLS AND CORROBORATION

Skill	Hausserman	Binet	Gessel	Cole	Portage	Cline
1. Recognition of common objects	2+ yrs.	2 yrs.				
2. Recognition of objects according to function	2.6 yrs.	2.6 yrs				
3. Recognition of body parts		2 yrs.				
4. Discrimination of sound-making objects	2 yrs.					
5. Recognition of pictures of objects	2+ yrs.	2 yrs.	2 yrs.			
6. Nesting according to size				2 yrs.		2 yrs.
7. Recognition of objects in pictures according to function	2.6 yrs.					
8. Recognition of shape (circle, square, triangle)	2 yrs.					

	Hausserman	Binet	Gessel	Cole	Portage	Cline
9. Recognition of size (big, little)	2.6 yrs.	3.6 yrs.			2-3 yrs.	
10. Prepositional directions (on, in, under)					2 yrs.	
11. Sorting grossly different objects				2-3 yrs.		
12. Copy block designs from a structure		2 yrs.	2-3 yrs.			
13. Recognition of action in pictures	2.6-3 yrs.				3 yrs.	
14. Spatial relationships	2½ yrs.	3½ yrs.				
15. 1-1 correspondence	3 yrs.					
16. Recognition of size of shape	3-4 yrs.					
17. Recognition of pictures of clothing		3½ yrs.				
18. Recognition of pictures of food		3½ yrs.				
19. Concept of one (more than one)	3 yrs.					



	Haussierman	Binet	Gessel	Cole	Portage	Cline
20. Recognition of colors (red, blue, yellow, green)	3½ yrs.					
21. Sorting according to form	3½ yrs.					
22. Recognition of weight (light, heavy)		3½ yrs.			3-4 yrs.	
23. Amount concept--two				3-4 yrs.		
24. Sorting color (form constant)	3½ yrs.	3½ yrs.				
25. Recognition of parquetry shapes						3½ yrs.
26. Spatial relationships (2-3 piece)						3½ yrs.
27. Recall of missing objects from memory		4 yrs.				
28. Recognition of size (long, short)					4-5 yrs.	
29. Recognition of texture (rough, smooth)	4-6 yrs.					
30. Amount concept--3					4-5 yrs.	
31. Discrimination of taste						4½ yrs.

	Hausserman	Binet	Gessel	Cole	Portage	Cline
32. Discrimination of smell						
33. Introduction of tactilemat pegboard						4½ yrs.
34. Recognition of similar objects in pictures						4-5 yrs.
35. Recall of missing picture from memory	4+ yrs.	4 yrs.			4-5 yrs.	
36. Recognition of parts of objects						
37. Recognition of difference						4-5 yrs.
38. Recall of missing shape from memory	4+ yrs.				4-5 yrs.	
39. Separating a stated number of objects from a group	4-6 yrs.					
40. Recognition of graded sizes	4-5 yrs.					
41. Recognition of size (large, medium, small)						4½ yrs.
42. Simple construction						4½ yrs.
43. Recognizing missing parts from pictures	4-6 yrs.	5 yrs.	4 yrs.			

	Hausserman	Binet	Gessel	Cole	Portage	Cline
44. Matching texture by touch alone	4-6 yrs.					
45. Lotto						4½ yrs.
46. Discrimination of sound-making blocks						4½+ yrs.
47. Recognition of things that go together						4½+ yrs.
48. Building block designs from cards						4½-5½ yrs.
49. Sequencing according to pattern						4½-5½ yrs.
50. Spatial relationships (4-5 pieces)						4½-5½ yrs.
51. Recognition of color (black, brown, orange, purple, white)						5-6 yrs.
52. Recognition of pictures that do not belong						5-6 yrs.
53. Graded symbols	5-6 yrs.					
54. Grading (long, short)						5-6 yrs.

Skill	Hausserman	Binet	Gessel	Cole	Portage	Cline
55. Matching multiple textures						5-6½ yrs.
56. Spatial relationships	5-6½ yrs.					

APPENDIX E

FEEDBACK SHEET



APPENDIX E

FEEDBACK SHEET

Number	Ass/Tr.	Type of Problem (materials, procedure, sequence, method)	Description	Suggestions
6	✓	sequence	nesting	2 boxes - Big - Little Put little one into big one
14	✓	sequence	spacial relationship	A could be eliminated & made a separate item further on, perhaps in egg instead of 1/4 circle
32	✓	physical inability to "sniff" in some cases	smell	cloves not distinguishable enough odor - Try oil of cinnamon or peppermint
31	✓	material	taste	substitute salt + sugar
33	✓	procedure	peg board	require a 10 peg design instead of 25. a : :
47	✓	material (not familiar with bottle opener)	go together	substitute straw or use straw with milk carton.
50	✓	material	4-5 pc. puzzle	specify if puzzle should contain background.
56	✓	sequence	spacial relationship	see 2/4 - omit 1/4 circle add 0



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