DOCUMENT RESUME

ED 030 495 24 PS 002 018

By-Geis, Robley

A Preventive Summer Program for Kindergarten Children Likely to Fail in First Grade Reading. Final Report.

La Canada Unified School District, Calif.
Spons Agency-Office of Education (DHEW), Washington, D.C. Bureau of Research.
Bureau No-BR-7-I-056
Pub Date Jul 68
Grant-OEG-1-7-070056-4266
Note-42p.
EDRS Price MF-$0.25 HC-$2.20
Descriptors-Enrichment Programs, *Experimental Programs, *Kindergarten, Kindergarten Children, *Low Ability Students, Parent Participation, Prevention, Program Descriptions, *Program Effectiveness, Reading Achievement, Reading Failure, Reading Readiness, *Summer Programs
Identifiers-Bender Motor Gestalt Test, Metropolitan Readiness Test, Stanford Achievement Test of Reading

In an attempt to lessen academic failure during the early years of schooling, 23 middle class kindergarten children who scored low on tests of cognitive development were given a special 6-week summer enrichment program. A control group of 23 low scorers received no enrichment program. Parents of the experimental subjects were invited to visit the 2-hour sessions to observe the program and were subsequently given advice on how they could help their children at home. Prior to the summer program, the experimental group's mean score on the Metropolitan Readiness Test (Form R) was 54.2; for the control group, it was 58.8; and for the district kindergarten population, it was 77.5. After the program, in August 1967, the experimental group had raised its score to 73. In September 1967, the experimental group scored 53.1 on Form A, and the control group scored 45.3. This difference was not significant. In May 1968, all first graders were administered the Stanford Achievement Test of Reading. The experimental children scored 30; the control children, 25, and the overall first grade population, 44. These differences were significant. It seemed that the Metropolitan Readiness Test successfully predicted which children would be low reading achievers, and it appeared that the summer program did aid the experimental children. (WD)

FINAL REPORT

Project No. 7-1-056
Grant No. OEG-1-7-070056-4266

A Preventive Summer Program for Kindergarten Children Likely to Fail in First Grade Reading

Robley Geis

La Canada Unified School District

La Canada, California

July, 1968

The research reported herein was performed pursuant to a grant from the Office of Education, U. S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

U. S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
Bureau of Research

ACKNOWLEDGMENTS

Appreciation is due the Members of the Governing Board of the La Canada Unified School District and to the Superintendent, Dr. Donald C. Ziehl, for their enthusiastic support of this project. Especial credit is due Mrs. Margaret Watson and Mrs. Marilyn Miller, the teachers who participated with great resourcefulness both in the planning and in the implementation of the project program. Gratitude is also expressed to Miss Frances Pryor whose expert knowledge of materials and techniques relevant to reading disability prevention contributed immeasurably to the project. We would also like to offer our thanks to the U. S. Office of Education without whose fiscal and professional assistance this project would not have been possible.

TABLE OF CONTENTS

SUMMARY

The purpose of this research was to study the effects of a six weeks' summer program specifically designed to ameliorate some of the discernible weaknesses of a group of children of high socio-economic status identified during kindergarten as being likely to fail in first grade.

Early reading failure may influence a child's entire academic career and damage his developing concept of himself as an able person. Head Start programs offer good evidence of the usefulness of preschool educational experiences for deprived children, but there is little reported in the literature in regard to preventive programs in advantaged communities where relative failure may be disabling to a number of children. This study was conducted in La Canada, California, a suburban community near Los Angeles, where high expectations of achievement are held by parents, by children, and by the school personnel.

Likelihood of failure was determined by scores on the Metropolitan Readiness Test, the Bender Motor Gestalt Test, and by teacher observation. Tests were administered to all children in twelve kindergarten classes during March, 1967. Control and experimental groups of 23 students each were randomly selected from the sixty children ranking lowest on the Bender (modified Koppitz scoring) and scoring below the fiftieth percentile on the Metropolitan. Pairs were matched on the basis of sex, Metropolitan scores, and Bender scores. No children suspected of mental retardation were included. The experimental group participated in a summer program individualized to strengthen weaknesses presumed to predispose the students to initial failure. Three students did not attend first grade in La Canada for various reasons. The final sample was composed of twenty pairs, six pair of girls, fourteen of boys.

The summer program provided two hours of instruction per day in classes of six students. Emphasis was placed on methods and materials designed to increase visual-perceptual skills, auditory discrimination, form perception, directionality, body knowledge and control, listening and language skills. Parents were invited to visit the class prior to a conference at which the child's strengths and weaknesses were delineated and suggestions of home help were outlined. Parents met in small groups with the district psychologist befoer the close of the session when further suggestions were made and materials distributed for home activities for the period between the close of the summer session and the beginning of the fall term. Workbooks returned in the fall indicated that the children had completed this part of the work.

Both control and experimental group children subsequently were placed in heterogeneously composed first grades in eleven of the thirteen first-grade classrooms of the four elementary schools of the district.

The mean raw score on the Metropolitan Readiness Test, Form R, given in March, 1967 - prior to the inauguration of the summer program was 54.2 for the experimental group, 58.8 for the control group, and 77.5 for the total district kindergarten population. The Bender mean score (inversely scored) was 18.6 for the experimentals, 17.8 for the controls, and 10.3 for the total district kindergarten population. At the close of the summer program, the experimental group earned a mean score of 73 on the Metropolitan and a mean score of 13.8 on the Bender. Control children were not available at this time for comparison.

In September, 1967, following the program the Metropolitan, Form B, was administered to both groups. The experimentals earned a mean raw score of 53.1 and the controls a mean raw score of 45.3. Using the Wilcoxon Matched Pairs Signed-Ranks test of significance, this difference was not significant at the five percent level of confidence.

In May, 1968, the Stanford Achievement Test of Reading, Primary I, Form W, was administered to all first grade students in the district. The mean raw score of the total first grade population of the district was 44, the mean raw score of the experimental group was 30, and the mean raw score of the control group was 25. Using the Wilcoxon Matched Pairs Signed-Ranks test of significance, this difference was significant at the five percent level of confidence.

The differences between the mean raw scores of the two study groups and the first grade population of the district as a whole would seem to indicate that the identification of these groups of children as having potential learning problems was accurate. The difference between the control group and the experimental group indicates that the summer program had a significant impact.

INTRODUCTION

PROBLEM This research is concerned basically with the problem of reading failure and more specifically with the possibility of mitigating failure when it can be predicted early in a child's school life. The study is based upon the supposition that reading failure in first grade produces certain personal and social disabilities including negative modification of the self-concept of the failing child (4). Erikson, (14) supports this point of view. "Failure at the early school age is much more important than failure at other times of life," he writes, "And it may set up a greater sense of doubt and inferiority than failure at any other stage." Newton (33) concurs with the premise that many reading problems are directly attributable to lack of initial success in reading. Early identification, diagnosis, and remediation may be seriously damaging to the children, sometimes irreversibly so. Eisenberg (13) says, "Children by the third grade are deeply imprisoned in faulty learning habits and convinced of their own ineptness will now respond poorly to any but the most expert individual clinical instruction. It is essential that we early identify the child who will not read on time." He further states that we should err on the side of over-identification, if necessary, in order not to miss those who might need help since extra help for the child who will not need it is irrelevant.

Supporting the point of the importance of the early school years Bloom makes the following statement.

> The absolute scale of vocabulary development and longitudinal studies of educational achievement indicate that approximately 50% of general achievement at grade 12 (age 18) has been reached by the end of grade 3 (age 9). This suggests the great importance of the first few years of school as well as the preschool period in the development of learning patterns and general achievement. These are the years in which general learning patterns develop most rapidly, and failure to develop appropriate achievement and learning in these years is likely to lead to continued failure or near failure throughout the remainder of the individual's school career. The implications for more powerful and effective school

> environments in the primary school grades are obvious. On the other hand, this research raises serious questions about the value of educational remedial measures at later stages. (3)

Reading is acknowledged by both educators and by the general public as the foundation of all academic learning. No other area of the curriculum is a matter of greater parental concern (36). Parental anxiety with regard to reading failure accurately reflects its importance as a predictor of the total life career of the child. An individual's economic security is becoming increasingly dependent upon his ability to complete high school. Much concern on the part of educators has been evidenced for the high school "drop-out", and those who do not wish to complete high school are frequently warned of the relationship of education to income.

A common factor found among high-school "drop-outs" according to a report by the New York State Department of Education (6) is academic retardation and particularly reading disability. Those who failed to stay in school were, in fact, failing in school. While it is probable that there is some school failure even among adequate readers, it is difficult to imagine school success for non-readers. Reading instruction begins in the first grade. So does school failure, according to Dobbin in a recent address, who said, "They begin, in the first grade, the process of dropping out of school" (12).

Causes of reading failure Failure to learn to read is one of the most persistent problems that besets students and educators. Identification of potential reading failures and planning preventive programs require investigation of the etiology of reading disorder. Smith and Carrigan (41) estimated that more than fifteen thousand journal articles had appeared in the previous forty-year period on the subject of teaching reading, a large number of these relating reading failure to such variables as intelligence, sex, emotional disturbance, neurological dysfunction and, perhaps, the manifestation of some combination of these perceptual disability. A summary follows of some of the findings in regard to the factors that have at some time been examined in terms of their relationship to reading failure. Particular emphasis will be placed on physiological or developmental factors which may be reflected in Bender Motor Gestalt Test scores.

Sex Few primary teachers would be surprised by the common research finding of a prevalence of reading disability among boys many times that found in girls. The disagreement among

researchers is not in fact but in degree of difference. Studies indicate that boys on the whole do less well in reading achievement, particularly in the beginning school years, and secondly, boys are found among retarded readers in a fairly large proportion (37, 34, 35). Among the explanations for the sex difference in reading achievement, one frequently subscribed to is the difference in maturation that seems evident between boys and girls at the age of school entrance. The physical development of females shows acceleration beyond that of males in terms of earlier puberty, earlier ossification of growing bone structure, earlier attainment of a greater proportion of their adult height and weight (1, 38).

Robinson (37) suggests that not only are boys less far along on the developmental path at beginning school age, but the school situation itself may be less appropriate for boys than for girls. In spite of recognition of the developmental differences, the same demands and requirements hold for boys and girls in a classroom. Some educators have suggested different entrance age requirements for the two sexes. In general, girls are better able to sit quietly, to pay attention, and to do work requiring small muscle coordination. They elicit less censure and generally more praise from primary teachers who are usually women and who may have less understanding of the more aggressive nature of male pupils. In addition to an enhanced personal relationship that may exist between girl students and female teachers to the disadvantage of boys, educators and educational critics have criticized basic reading materials for their pallidness and lack of exciting appeal to boys. Many writers seem to agree that, for various reasons, girls appear to be highly motivated towards academic success and demonstrate more enthusiasm and interest in the school experience, at least in the primary grades.

Intelligence Most reading experts agree that mental ability as tested by standardized intelligence tests does made a contribution to reading success or failure. The correlation between reading and intelligence is far from a perfect one, however; and other variables seem to take precendence, at least in the beginning period of learning to read (17). Some children with good ability encounter moderate to severe difficulty in learning to read (15, 5). Both Mattick (30) and Hahn (18) found that standardized reading readiness tests were at least as predictive of reading success as were tests of mental ability.

On the other hand, high verbal ability may be a mitigating or compensating factor when other possible disabling factors are present, for instance, in the case of slow visuo-motor development. Keogh and Smith (20) found that children with very high verbal ability succeeded in reading even though they earned poor scores on the Bender Motor Gestalt Test. Several studies investigating the influence of mixed or uncertain cerebral dominance suggest that intelligence is an important factor in modifying such influence (25, 32). Other factors being equal, the more intelligent child will learn to read more easily, and, perhaps, even in the presence of potentially disabling factors, the more intelligent child will be able to compensate as cognitive factors take precedence over visuo-motor skills as a learning requisite (27, 5) unless as Bloom (3) and Erikson (14) suggest, failure has overwhelmed the student early in his experience and established a pattern.

Sensory disabilities In addition to the common problems of visual and auditory acuity which are usually correctable, attention is being given to the contribution made to reading disability by poor discriminatory development in these two sensory areas. The correction of faulty vision, per se, presents no insurmountable problems, as a rule, and is usually a hazard that parents, child, and teacher are aware of and can take into account. The faulty integration and utilization of visual stimuli, such as is seen in figure-ground disturbance, are less readily diagnosed, and may be part of a broader pattern of neurological dysfunction. This subject has been a matter of some controversy among reading experts. Some investigators have expressed the view that perceptual problems or lack of maturation in this area is largely responsible for early reading failure. Benton (2) felt that visuoperceptive deficit was important in very early disability. Money (32) says, "....inferior form perception, visuomotor skill and directional sense are associated with reading retardation in younger children." In a later publication the same author, Money (13), says, "The great majority of reading disability cases will be classifiable not on the basis of brain pathology, but simply as representative of a lag in the functional development of the brain and nervous system that subserves the learning of reading." In a study at the Clinic School at the University of California at Los Angeles, Coleman (8) found that a majority of forty reading disability cases showed significant perceptual retardation. Similarly Silver and Hagin (40) found in a follow-up study extending over a ten to twelve year period,

a persistence of neurological and perceptual problems. With the belief that visuo-motor efficiency is related to reading achievement, it is not surprising that the Bender-Gestalt Test is considered by many researchers as a useful instrument to attempt prediction of early reading success or failure.

The culpability of mixed laterality, or poor establishment of cerebral dominance, as a prime factor in reading disability waxes and wanes in popularity. Evidence on either side of the argument seems to be inconclusive and the truth probably lies in the direction of the hypothesis that mixed laterality in combination with other factors which are not clear at this time probably influences early reading. Koos (25) found that the influence of the lack of unilaterality varied with the IQ level in that brighter children could better accomodate confused or mixed laterality. Spache (42) comments on this issue, "Presence of complete or partial dominance of one hemisphere has not yet been shown to bear a casual relationship to reading disability. The time spent in futile tests of these functions might better be devoted to discovering children whose perceptual-motor development is inadequate. Their lack of development results in ocular incoordinations and lack of hand-eye coordination with consequent difficulties in reading and writing."

A newer and apparently quite promising approach to reading disability etiology and the consequent recommended remedial techniques that should be mentioned is the psycholinguistic approach which is currently being investigated by experts such as Frostig, Wepman, Kirk, Bateman, Mycklebust, and McCarthy and Cook. To date, these findings, too, are inconclusive.

Summary The assumptions upon which this study is based are: (1) causes of reading failure are multiple, complex and interrelated, (2) the causes are different for each individual child, and (3) preventive or remedial programs must be based upon investigation of each student's strengths and weaknesses.

The objectives of this research are an evaluation of the weaknesses that presumably predispose certain children to failure in the initial reading process and the implementation of a prescribed program that will mitigate the influence of these potentially disabling factors. It is assumed that any degree of failure prevention is more efficient than remediation after a child has experienced failure.

METHODS

Setting La Canada is a fairly homogeneous, suburban community near Los Angeles. The population is composed of middle-class Caucasians, predominantly Protestant, whose mean family income of approximately $12,000 (U.S. Bureau of Census, 1960) per year is derived primarily from professional or managerial pursuits. The mean intelligence quotient of the total school population is about 115. The standards of achievement held by the parents and by the school are relatively high, competition is keen, and failures are a matter of considerable concern to parents and children alike. An unsatisfactory level of achievement in La Canada may very well be considered adequate in other less advantaged areas.

The children are well-housed, well nourished, and attention is given to their medical and dental needs. Many of the children have had a year or more of nursery school before entering kindergarten. Books, television, art, music, and travel provide a rich background of experience in most of the homes. A recent survey indicated that about ninety-eight percent of the parents of first-grade children expect their children to attend college.

Limitations Both the causes and the effects of reading difficulty may be somewhat different in this kind of setting from those found in a population of greater variability. The findings from this research are generalizable without reservations only in a similar community of high socio-economic status with bright children from advantaged homes. In contrast to the Head Start programs, the preventive program planned for this setting had quite different emphases.

Identifying Instruments During March of 1967 all kindergarten children in the district were tested individually with the Bender Motor Gestalt Test. The Bender tests were scored with a modification of the Koppitz method (26) which took into account accuracy of reproduction, rotation, perseveration, angulation, integration, direction, and collision. Scoring was inverse so that the higher scores indicated the poorest performance. Two items were taken from the De Hirsch (11) scale of appraising readiness, pencil grasp and the ability to write his own name, and additional points were scored for inadequacy on these items. (Appendix A) De Hirsch found these two items to be significantly related to readiness. Strang (43) comments on the Bender test, "The Bender Visual Motor Gestalt Test is widely used in reading clinics to stydy eye-hand coordination and also to give to the clinically trained person, familiar with the test, clues to possible brain injury or neural disorganization..... The resulting distrubed pattern of neurological organization is often characterized by disability in dealing with words as symbols and is being recognized as a cause of primary reading retardation." Spache (42) also feels that most readiness tests are

not sufficiently cued to visual perception even though he believes that this is an important readiness factor.

The Bender Motor Gestalt Test was administered individually by counselors and psychometrists. The tests were scored independently by two psychologists and in those few cases where the scorers were not in agreement, an average of the two scores was submitted as the final score.

The Metropolitan Readiness Test, Form R, (1949) was used in March of 1967 and again with the experimental group in August at the end of the program. Kingston (22) found significant correlation between the Metropolitan Readiness Test and subsequent reading achievement as measured by the Stanford Achievement Test, But not to the degree of warranting prediction. He found that the matching test of the Metropolitan correlated to a greater degree with reading achievement than other parts of the test and stated that he believed this to be so because "... the matching test appears to be largely a measure of perception." Hopkins and Sietke (19) and Mattick (30) found that the Metropolitan Readiness Test predicted first grade reading performance at least as well as standardized intelligence tests. Hopkins and Sietke give the following reasons for considering the use of the readiness test preferable to an intelligence test: "(1) it requires considerably less testing time, (2) it is more easily and meaningfully interpreted, (3) the effects of improper interpretation are much less serious to the pupil, and (4) it is less expensive."

Kindergarten teachers contributed their observations about each child on a check list (See Appendix B). These three observations, the Bender Motor Gestalt Test, the Metropolitan Readiness Test, and the teacher check sheets, were then used in selecting the sample population. In all cases the children selected on the basis of scoring of the two tests alone were children who would have been selected by the teachers questionable risks for adequate first grade achievement.

Sample From sixty children ranking lowest on the Bender who also fell below the fiftieth percentile on the Metropolitan Readiness Test and excluding those children who were suspected of mental retardation and those children who would not be attending school in a first grade in La Canada, two groups

of twenty-four children were randomly selected on an odd-even basis. The pairs were matched by sex and as closely as possible on the basis of the two scores. The mean score on the Metropolitan Readiness Test for the experimental group was 59.7 for the control group it was 58.8 and for the twelve kindergarten classes of the district the mean score was 77.5. No attempt was made to match the groups on the basis of IQ since mental ability testing is not done routinely in the district until the middle of the second semester of the first grade. In March, 1968 the Lorge-Thorndike Intelligence Test (1957) was administered in all first grades. Mean IQ for the total group was established at 110, mean IQ for the experimental group was 107 and for the control group, 108.

Letters of invitation to attend the summer program were sent to the parents of the twenty-four children in the experimental group. Twenty-three acceptances were received and these children attended regularly. At the close of the summer session, the decision was made to have one of the children repeat kindergarten since his general level of maturation seemed to indicate that this would be the better choice for him. One other child was assigned to a special school outside the district. The control group mate of a third child left the district. The final sample was composed then of twenty children in each group who completed the first grade in the district. Since the children came from four different elementary schools, only half of the pairs could be assigned to the same teacher. By chance, eleven of the thirteen first grade teachers in the district had one or more of the forty study children in their classes. Classes in the district are heterogeneously composed at the primary level. Class assignments are made by the principals and no attempt was made to select certain teachers nor to avoid others in the assignment of study children. No notification was given teachers as to which children were in either group. It is possible, however, that the experimental children or their parents might have mentioned this experience to the teacher. It is difficult to determine the direction of bias as the teacher could as easily be influenced by the child's identification as a potential learning problem as by the fact that he had had exposure to a special program.

Program The experimental group participated in a six-weeks' summer program beginning June 25, 1967 and running through August 4, 1967. The children were taught in groups of five or six for a period of two hours per day under the direction of two credentialed teachers who were highly skilled and

experienced in working with a variety of beginning reading techniques. Some flexibility in grouping was observed as some activities were practical for a larger group, freeing one teacher to work with individuals or groups of two or three children for certain types of instruction or when new material was being introduced. The two teachers participated in a week's detailed planning period before the program began. This time was spent in planning for each child individually on the basis of all gathered information about him. Materials and equipment were specific to the needs of the children represented. Consultation was provided by the district psychologist and by the district reading consultant.

Two classrooms were used and the groups moved between them several times in the course of each two-hour session. One room housed the equipment for motor skills development, for example, a large truck innertube, walking boards, balance boards, beanbags, balls. The other room was used for activities directed to small muscle control, listening and language development.

Types of activities The program encompassed a balanced combination of various activities designed to facilitate growth in those areas in which weakness is considered responsible for early reading failure by reading authorities. This eclecticism was regarded as one of the major strengths of this program in relation to other experimental programs that have stressed the visuo-motor or language approach, for example, more or less exclusively. Cohen (9) found that the use of Frostig-based materials increased the students' ability to score on the Frostig test (1964) but did not significantly increase their subsequent reading scores. In order to improve the students' chances of success in beginning reading the following objectives for the summer program were established: (1) increased visuo-motor-perceptual skill, (2) increased auditory discrimination, and (3) increased language facility in both comprehension and expression.

Activities designed to help children develop body image, concept of self in relation to space, and gross and fine motor coordination taken from Kephart (21), Clark (7) and Cratty (10) were employed. Opportunities were provided to increase control, balance, the ability to alternate, rhythmic organization, and left-right discrimination through the use of exercises, games and special equipment such as balance boards

and walking beams. Small muscle control and coordination were developed with peg boards, lacing, cutting, clay and sponge work, the use of stencils and templates (28), and other materials adaptable to these purposes.

A modification of Wepman's (See Appendix C) auditory discrimination test was employed in the first sessions. It was found that all the children needed further training in listening for fine differences in sounds and rhythms, so these types of activities became part of the daily program. Auditory training proceeded in terms of individual need and progress with some of the children being able to learn some consonant sounds and to connect them with the appropriate letter symbols.

Children were given the opportunity to listen to and to tell stories, to see their stories written from dictation, to read them themselves in order to increase their understanding of concept that spoken language can be represented in symbols. Language comprehension, vocabulary, and the ability to organize thoughts and ideas into verbal expression were increased by providing the children with greater opportunity to talk and to listen to others than is normally possible in a regular class of twenty or more students. The Peabody Language Kit, Level I, books, charts, pictures, tapes, and records were employed as needed.

Workbooks and teacher-made training materials based on the Frostig Test of Visuo-Motor Perception (1964) and the Illinois Test of Psycholinguistic Abilities (1961) were used. The objectives of these materials were increased visuo-motor skill, directionality (left-to-right), automatic language, figure-ground discrimination, form perception and so forth. (For samples of teacher-made materials see Appendix D)

In summary, the body of the program encompassed those kinds of training procedures that are at the present time being used to correct reading deficit with children who are already failing. Drawing from the literature and from the experience of the remedial teachers and the reading consultant in the district, these are the procedures believed by this investigator to be likely to prevent reading disability particularly if used in combination, early in the school career of the child, and in small enough groups to ensure optimal teacher-child contact and maximum individualization of the program.

Included in the appendix are four samples of daily programs used during the summer session. A listing of all published materials, a description of equipment built for the project, and some samples of teacher made materials are also to be found in the appendix.

Parent participation Parental approval for participation in the summer session was sought in a conference with one or both parents following the mailed invitation. At this conference the kindergarten teachers discussed each child's needs and the objectives of the summer program. Care was taken not to alarm the parents. The experimental nature of the project was emphasized both in terms of the identification of potential learning problems and the amelioration of such difficulties. The response to twenty-four invitations resulted in twenty-three acceptances and one rejection due to prior plans for summer travel. The parents provided transportation, sometimes in car pools, to and from the school. All of the parents appeared to be interested and to view the project as an opportunity for their children that was worthy of their interest and participation.

During the summer, each parent visited one two-hour session in order to gain an overview of what was involved. Following the parent observation, a conference was held with the child's teacher at which time the activites and their objectives was explained in terms of the child's need. Suggestions were made by the teacher for continuance at home of some of the activities that were especially important to the child.

At the close of the program, parents were invited in groups of eleven or twelve to participate in further discussion with the school psychologist who was also director of the project. At this time, materials were issued and further suggestions made for continued use of Frostig workbooks and the Winterhaven templates. Instructions were given for constructing and using a large black-board at home. (See Appendix D) Suggestions for reading to the children and for providing listening experiences for them were also made. The specific instructions plus what had been gained from the class observation provided abundant material for a home program. The workbooks and templates were returned to the school when school opened in the fall and there was evidence that at least this part of the suggested homework had been completed.

FINDINGS

An assessment of the value of the summer experience was based upon reading achievement of the control and experimental groups as measured by the Stanford Reading Achievement Test (1964) administered in May, 1968, near the close of the first-grade year.

The children from the study groups were assigned to eleven first-grade classrooms in four elementary schools after the summer during which the experimental group had received special attention. Since the instruction of eleven teachers is represented in the first-grades, the variability that exists in the presentation of the instructional program would tend to reduce the biasing effect of the ability of teachers and of students' responses to such teachers. It is assumed that any significant difference in reading achievement of the experimental group in comparison to the control group is directly related to the summer program including the parent participation and home assistance.

Table I gives the individual raw scores for each student and the mean score for his group on various tests. The mean raw score on the Metropolitan Readiness Test, Form R, given in March, 1967 - prior to the inauguration of the summer program - was 54.2 for the experimental group, 58.8 for the control group, and 77.5 for the total district kindergarten population. The Bender mean score (inversely scored) was 18.6 for the experimentals, 17.8 for the controls, and 10.3 for the total district kindergarten population. Since the study population was selected on an odd-even basis from the children who ranked lowest on the Bender and wo also scored below the fiftieth percentile on the Metropolitan, the similarity between the mean scores of the two study groups and the disparity between these mean scores and the mean score of the kindergarten population of the district as a whole was to be expected.

At the close of the summer program, the experimental group showed a mean score of 73 on the Metropolitan and a mean score of 13.8 on the Bender which would only indicate that after a lapse of four months and with the summer intervention, the group had moved nearer to the performance of the kindergarten population of the district but were still performing slightly below the point where their peers had been four months earlier. Control children were not available at this time for comparison.

In September, 1967, following the program, the Metropolitan Readiness Test, Form A, was administered to both groups. The experimental group had a mean raw score of 53.1 and the control group a mean raw score of 45.3 Using the Wilcoxon Matched-Pairs Signed-Ranks test of significance (39), this difference was not significant at the five percent level of confidence. On the basis of this comparison, then, readiness for first-grade reading as measured by the Metropolitan Readiness Test was not influenced by the summer program.

Toward the end of the first-grade year in May, 1968, the Stanford Achievement Test of Reading, Primary I, Form W, was administered to all first grade students in the district, in fact to all first grade students in California. One of the primary reasons for the selection of this test as the final evaluative instrument was the fact that it was given routinely and necessitated no special testing of the study groups. The test also provided a comparison with the students in all first-grades of the district. The mean raw score of the total first-grade population of the district was 44, which is above the average reading achievement of the first grade students over the state. The mean raw score of the experimental group was 30, and the mean raw score of the control group was 25. Using the Wilcoxon Matched-Pairs Signed-Rank test of significance, this difference was significant at the five percent level of confidence.

The differences between the mean raw scores of the two study groups and the first grade population of the district as a whole would seem to indicate that the identification of these groups of children as having potential learning problems was accurate. The difference between the control group and the experimental group indicates that the summer program had a significant impact.

CONCLUSIONS

This study indicates that achievement in first-grade reading can be predicted with some accuracy on the basis of the Metropolitan Readiness Test when it is used in combination with the Bender Motor Gestalt Test and with teacher judgments, at least for the lower end of the scale. It is this group of children, facing possible failure, for whom we

are concerned in terms of planning intervention programs that may serve to mitigate this failure. The findings of this study indicate quite clearly that an eclectic approach directed towards improvement of visuo-motor-perceptual skills, auditory discrimination, and language facility and also involving parental support can influence developmental factors related to early reading achievement whether they be genetically or experientially caused.

The La Canada School District on the basis of the findings of this study continued the identification and ameliorization programs in the summer of 1968. In addition, by benefit of National Defense Education Act-Title V-A funding the program of special assistance to children and their parents will continue throughout the first grade. An evaluation at the end of the school year, 1969, will determine what additional gains can be made with extended special help.

A future study of some interest would be to determine the precise influence of the parent education and involvement. It may be that this was an important variable that contributed greatly by reducing parental anxiety, enhancing pre-knowledge that the child might not succeed easily, and increasing the parent's feeling that he was being of assistance in ways that were approved and supervised by the school.

TABLE I

		EXPERIMENTAL						CONTROL			
		Metro. Readiness Pre-program	Bender Pre-program	Metro. Readiness During Program	Bender During Program	Metro Readiness Post-program	Stanford Reading Post-program	Metro. Readiness Pre-program	Bender Pre-program	Metro. Readiness Post-program	Stanford Reading Post-program
Pair	A	70	17	72	12	67	31	69	17	40	20
	B	54	26	67	15	48	34	59	26	55	15
	C	69	12			65	23	68	12	45	18
	D	57	19	69	21	40	10	57	20	38	16
	E	44	16	63	10	40	14	41	17		10
	F	66	17	78	16	58	35	67	16	68	30
	G	65	13	68	10	61	34	65	16	62	41
	H	48	20	75	10	62	17	53	22	38	6
	I	50	14	81	10	59	33	49	16	32	22
	J	70	16	75	16	60	27	61	15	30	14
	K	66	14	77	12	55	30	62	14	44	36
	L	55	25	69	23	55	20	54	20	36	14
	M	63	20	78	19	44	45	62	22	56	28
	N	47	18	73	10	50	29	49	18		13
	O	56	16			42	26	58	17	44	25
	P	69	12	78	9	67	52	68	13	60	46
	Q	66	12	90	8	63	34	67	12		22
	R	69	20	75	14	66	62	70	21	55	34
	S	45	22	67	17	22	24	41	20	25	35
	T	55	24	65	16	39	25	56	23	43	43
Mean Score		59.7	17.6	73.3	13.7	53.1	30.2	58.8	17.8	45.3	24.9
Mean District Score		77.5	10.3				44				

BIBLIOGRAPHY

1. Baldwin, B. T., The physical growth of children from birth to maturity. Univ. of Iowa Studies in Child Welfare, 1921, 1, No. 1.

2. Benton, Arthur, Right-left discrimination and finger localization. New York, Hoeber, 1959.

3. Bloom, Benjamin S., Stability and change in human characteristics. New York, John Wiley, 1964.

4. Brookover, Wilbur B. et al, Definitions of others, self-concept, and academic achievement: A longitudinal study (A paper presented at the American Sociological Association Meetings, August 30, 1965, Chicago, Illinois).

5. Bryan, Quentin R., "Relative importance of intelligence and visual perception in predicting reading achievement," California Journal of Educational Research, 15:44-48, 1964.

6. California Guidance Newsletter, Vol. 20, #1, 1965 excerpt from Work-Study Programs for Potential Dropouts, New York State Dept. of Education, 1965.

7. Clark, Carol, Rythmic Movement Activities, Los Angeles, Los Angeles County Superintendent of Schools, 1966.

8. Coleman, J. C., "Perceptual retardation in reading disability cases," Journal of Educational Psychology, 44:497-503, 1953.

9. Cohen, Ruth, Remedial Training of First Grade Children with Visual Perceptual Retardation, unpublished doctoral dissertation, University of California at Los Angeles, 1966.

10. Cratty, Bryant J., Developmental sequences of perceptual motor tasks, New York, Educational Activities, Inc., 1961.

11. De Hirsch, Katrina, Prediction of reading failure, New York, Harper Row, 1966.

12. Dobbin, John, address to California Association of School Psychologists and Psychometrists, San Francisco, 1965.

13. Eisenberg, Leon, in The Disabled Reader, ed by John Money, Baltimore, Johns Hopkins Press, 1966.

14. Erikson, Erik H., Childhood and Society. New York, W. W. Norton and Co., 1950.

15. Fernald, Grace, Remedial techniques in basic school subjects. New York, McGraw Hill Book Co., 1943.

16. Frostig, Marianne, Test of visuo-motor perception. Chicago, Follett Publishing Co., 1964.

17. Goins, Jean, "Visual perceptual ability and early reading progress," Supplementary Education Monograph #87, Chicago, Chicago, Chicago University Press, 1958.

18. Hahn, H. T., "Three Approaches to Beginning Reading Instruction - ITA, Language Arts and Basic Readers," The Reading Teacher, 19:590-594, 1966.

19. Hopkins, Kenneth and Sitkei, George, Methods of predicting grade one reading performance compared. Los Angeles, Los Angeles County Superintendent of Schools, 1966.

20. Keogh, Barbara and Smith, Carol, "The bender gestalt as a predictive and diagnositc test of reading performance," Journal of Consulting Psychology, 17:172-175, 1965.

21. Kephart, Newell C., The slow learner in the classroom. Columbus, Ohio, Merrill, 1960.

22. Kingston, Albert H., The relationship of first grade readiness to third and fourth grade achievement," Journal of Educational Research, 56:61-67, 1962.

23. Kirk, Samuel A. and Barbara Bateman, "Diagnosis and remediation of learning disabilities," Exceptional Children, 29:73-77, 1962

24. Kirk, Samuel A. and McCarthy, James J., "The Illinois Test of Psycholinguistic Abilities - an approach to differential diagnosis," American Journal of Mental Deficiency, 66:399-412, 1961-62.

25. Koos, Eugenia, "Manifestations of cerebral dominance and reading retardation in primary grade children," Journal of Genetic Psychology, 104:155-165, 1964.

26. Koppitz, Elizabeth Munsterberg, The Bender Gestalt Test for young children. New York, Grune Stratton, 1965.

27. Lachman, Frank M., Perceptual-motor development in children retarded in reading ability," Journal of Consulting Psychology, 24:427,431, 1960.

28. Lowder, R. G., Perceptual ability and school achievement. Winterhaven, Florida, Winterhaven Lions Club, 1956.

29. Malmquist, Eve, Factors related to reading disability in the first grade. Stockholm, Almquist and Wiksell, 1958.

30. Mattick, William E., "Predicting success in the first grade," Elementary School Journal, 63:273-276, 1963.

31. McCarthy, James J. and Kirk, Samuel, Illinois Test of Psycholinguistic Abilities. Urbana, Illinois, Institute for Research on Exceptional Children, University of Illinois, 1961.

32. Money, John, Reading disability. Baltimore, Johns Hopkins Press, 1962.

33. Newton, J. Roy, Reading in your school. New York, McGraw Hill, 1960.

34. Nila, Sister Mary, "Foundations of a successful reading program," Education, LXXIII (May, 1953).

35. Prescott, George A., "Sex differences in Metropolitan Reading Readiness Test results," Journal of Educational Research, XLVIII (April, 1955).

36. Preston, Mary I., "Reaction of parents to reading failure," Child Development, 10:173-174, 1939.

37. Robinson, Helen M., "Factors which affect success in reading," Elementary School Journal, LV, January, 1955.

38. Shuttleworth, F. F., The physical and mental growth of girls and boys age six to nineteen in relation to maximum growth. Monograph Society Research in Child Development, 1939, 4, 3.

39. Siegel, Sidney, Nonparametric statistics for the behavioral sciences. New York, McGraw Hill, 1956.

40. Silver, A. and Hagin, Rosa, "Specific reading disability: follow-up studies," American Journal of Orthopsychiatry, 29:298-314, 1959.

41. Smith, Donald E. P. and Carrigan, Patricia M., The nature of reading disability. New York, Harcourt, Brace and Co., 1959.

42. Spache, George, Toward better reading. Champaign, Illinois, Garrard Publishing Co., 1963.

43. Strang, Ruth, Diagnostic teaching of reading. New York, McGraw Hill Book Co., 1964.

44. Wepman, J. M., "Auditory discrimination, speech and reading," Elementary School Journal, 60:325-333, 1960.

APPENDIX A

BENDER OBSERVATIONS

To be used at time of administration:

Date _____

Student's name _____

Teacher's name _____

Pencil Grasp

Very Clumsy _____

Somewhat Clumsy _____

Good Control _____

Direction:

Always L to R _____

Sometimes L to R _____ Which cards? _____

Never L to R _____

Always Bottom to Top _____

Sometimes Bottom to Top _____ Which cards? _____

Never Bottom to Top _____

Circles always made counter clockwise _____

Circles sometimes made counter clockwise _____

Circles never made counter clockwise _____

Hand used R _____ L _____ Both _____

Eye used R _____ L _____

Comments: General approach to the tasks e.g., confident, fearful, careless, slow, etc. Also note any deviant behavior such as covering an eye, hyperactivity, tears, etc.

BENDER SCORING

NAME_____

TEACHER_____

KINDERGARTEN SCORING SHEET - BENDER GESTALT TEST

NOTE: Scoring is inverse, ie high score indicates poor performance.

Design A
1. Grossly misshappen ____
2. Grossly disproportioned ____
3. Sides of square don't meet ____
4. Rotation (45° or more) ____

TOTAL ____

Design 2
1. Rotation ____
2. 1 or 2 rows omitted, 4 or more loops in most columns ____

TOTAL ____

Design 4
1. Rotation
2. Parts not joined or excessive overlap ____

TOTAL ____

Design 5
1. 2 or more circles or dashes ____
2. Rotation ____
3. 5 or less dots in arch ____
4. Lines instead of dots ____

TOTAL ____

Design 6
1. More than 3 angles in curves ____
2. No curves, straight lines ____
3. 2 lines not crossing or crossing at extreme end ____

TOTAL ____

Design 8
1. Angles, extra or missing ____
2. Rotation ____

TOTAL ____

BENDER OBSERVATION:

Writes own name ____ (Score 0 for well written, 1 for poorly written, 2 for not at all)

Pencil Grasp ____ (2 very clumsy, 1 somewhat clumsy, 0 good control)

Direction ____ (1 point for each instance of R to L, or Bottom to Top, or clockwise circles)

Collision ____ (Score inversely 1 to 5 on orderly use of paper.

TOTAL COMPOSITE SCORE _____

APPENDIX B

LA CANADA UNIFIED SCHOOL DISTRICT

KINDERGARTEN EVALUATION CRITERIA

Pupil's Name_____ Teacher_____

Birthdate_____ Date of Evaluation_____

Except for factors under General Physical Information, all factors will be evaluated on the basis of a three point scale:

1 - Unusually and significantly above the level of age group

2 - Within the broad range typical of age group

3 - Significantly below the level of age group

I. PHYSICAL

A. General Information
(Indicate normal development for age or any evidence of defects if any exist)

1. Age _____
2. Size _____
3. Vision _____
4. Hearing _____
5. Speech _____
6. Energy _____

B. Developmental Patterns (Use 3 point scale)

1. Coordination (small muscle) _____
2. Coordination (large muscle) _____

II. SOCIAL & EMOTIONAL (Use 3 point scale)

1. Shows ability to take the lead _____
2. Works effectively with others in other than a leaders role _____
3. Shows self confidence _____
4. Is stable; regains composure in stress _____
5. Is adaptable; not upset by new or different situations _____
6. Assumes and enjoys responsibility _____
7. Has friends with whom he plays satisfactorily _____
8. Adjusts to routines and authority _____

APPENDIX B

KINDERGARTEN EVALUATION CRITERIA

CONTINUED

III. PERFORMANCE (Use 3 point scale)

1. Works independently _____
2. Is able to organize materials and ideas _____
3. Is able to interpret written symbols _____
4. Communicates ideas verbally with effectiveness ___
5. Shows some special abilities (art, music, etc.)___
6. Understands quantitative relationships _____
7. Is able to listen and follow directions _____
8. Follows stories with comprehension and recall_____

IV. GENERAL CHARACTERISTICS (Use 3 point scale)

1. Shows originality _____
2. Demonstrates critical judgment _____
3. Is curious and seeks new information _____
4. Is alert to his environment _____
5. Can attend to tasks over a period of time_____
6. Enjoys school _____

APPENDIX C

AUDITORY ACUITY TEST

1.	tim	tim	10.	bit	bet
2.	tap	tip	11.	ocean	ocean
3.	send	sand	12.	pound	pond
4.	rain	rain	13.	hunts	huts
5.	bud	but	14.	buttercup	cupperbut
6.	shall	shall	15.	chin	shin
7.	butterfly	flutterby	16.	wonderful	wonderful
8.	dime	dine	17.	cashing	catching
9.	glad	glad	18.	swing	sling
			19.	trot	trot

Instructions: Pronounce each set of words in same tone.

Child taps if words are alike.

APPENDIX D

NOW EVERY CHILD CAN HAVE A CHALKBOARD

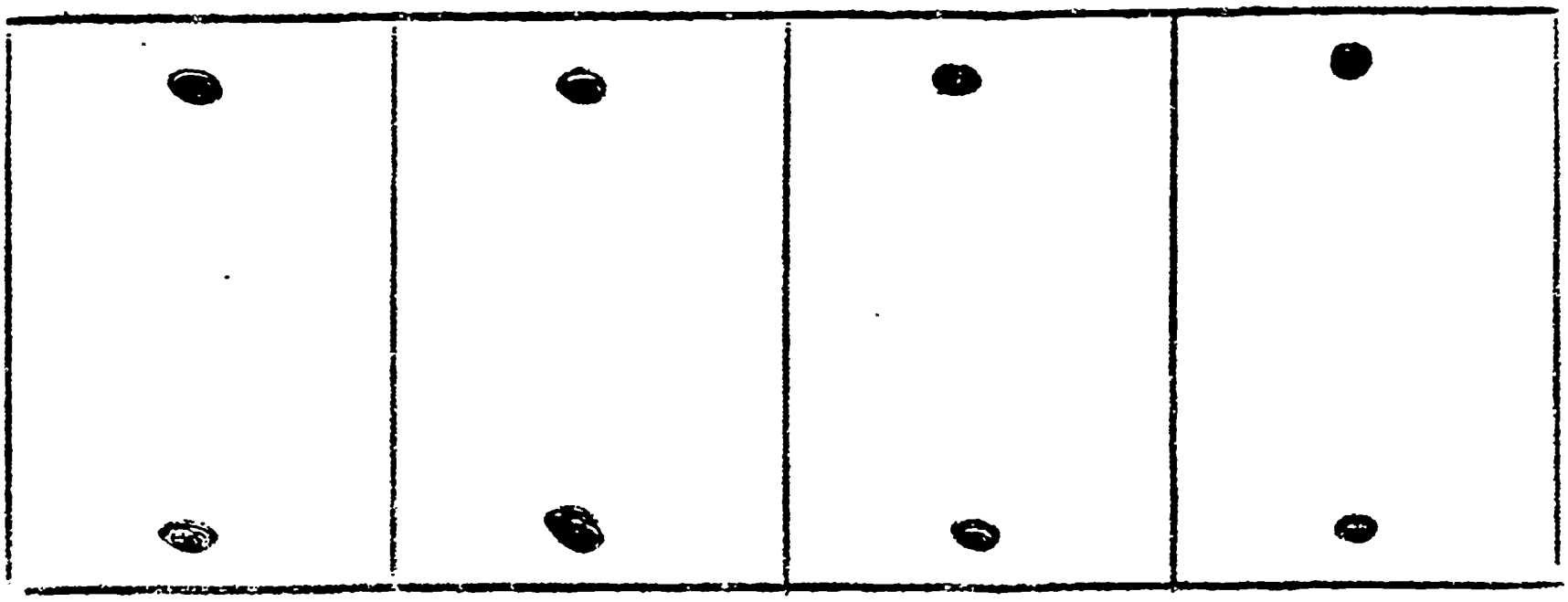
Children of all ages like to write on the chalkboard and many of them quickly learn words (reading or spelling) when they have a big chalkboard in their own rooms.

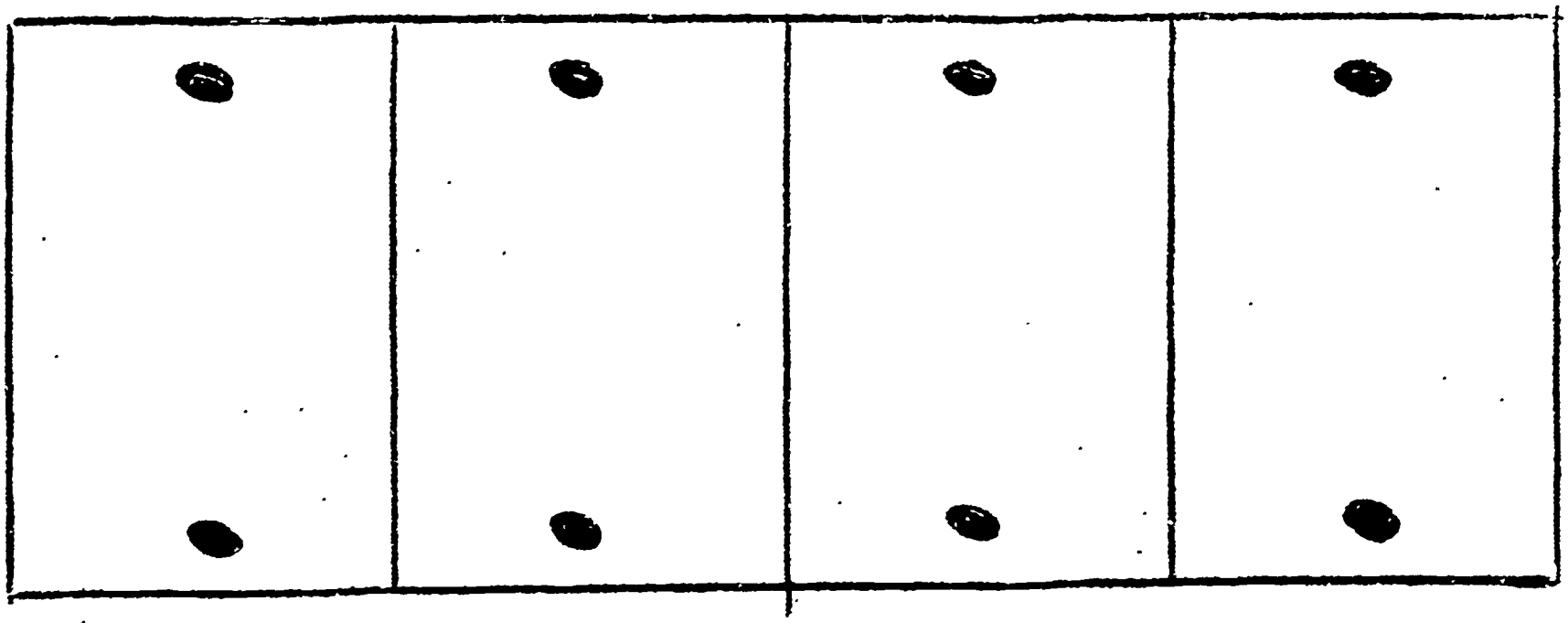
Recently a parent told me how she made one at very little cost. She bought a 4' x 5' sheet of Masonite at a local lumber company which cost $2.75. The slate paint (@ 65¢) and four clips (@ 28¢) made the total cost of the chalkboard $3.68. Another parent just used slate paint on a closet door for her child's chalkboard.

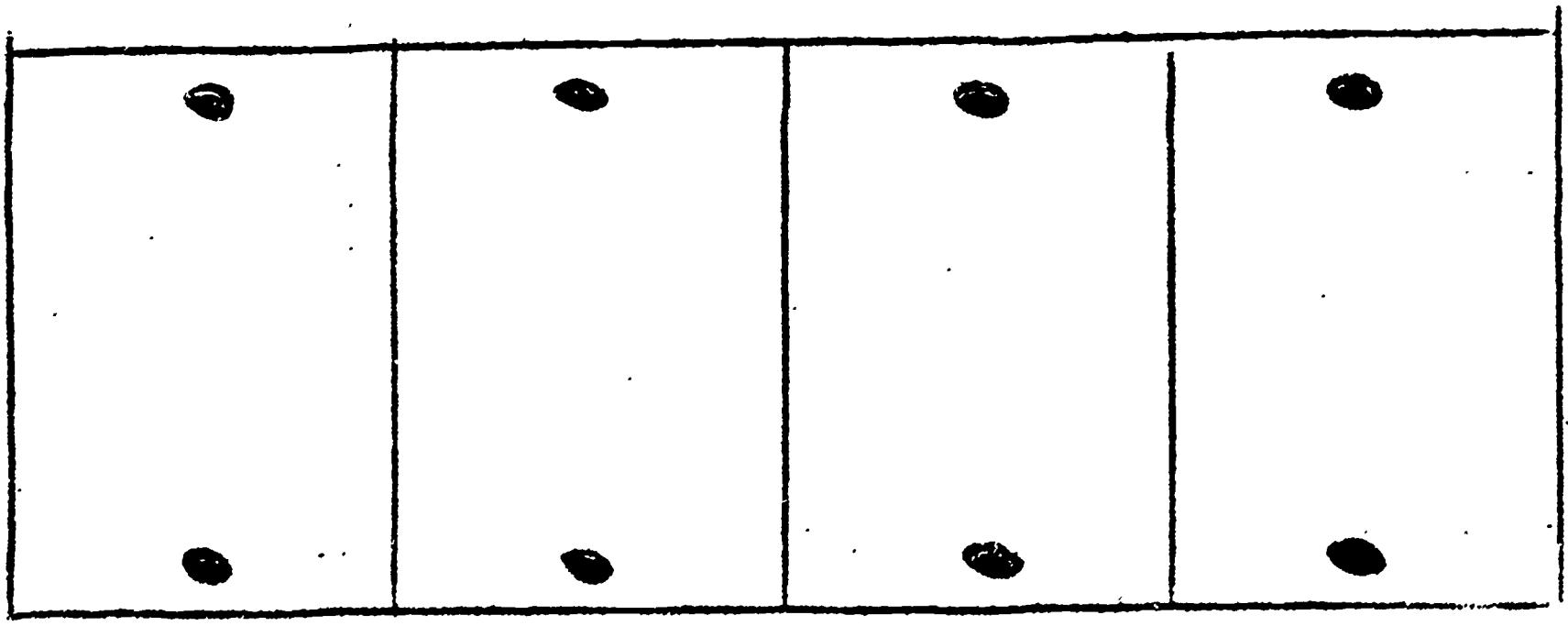
Frances Pryor
Reading Consultant

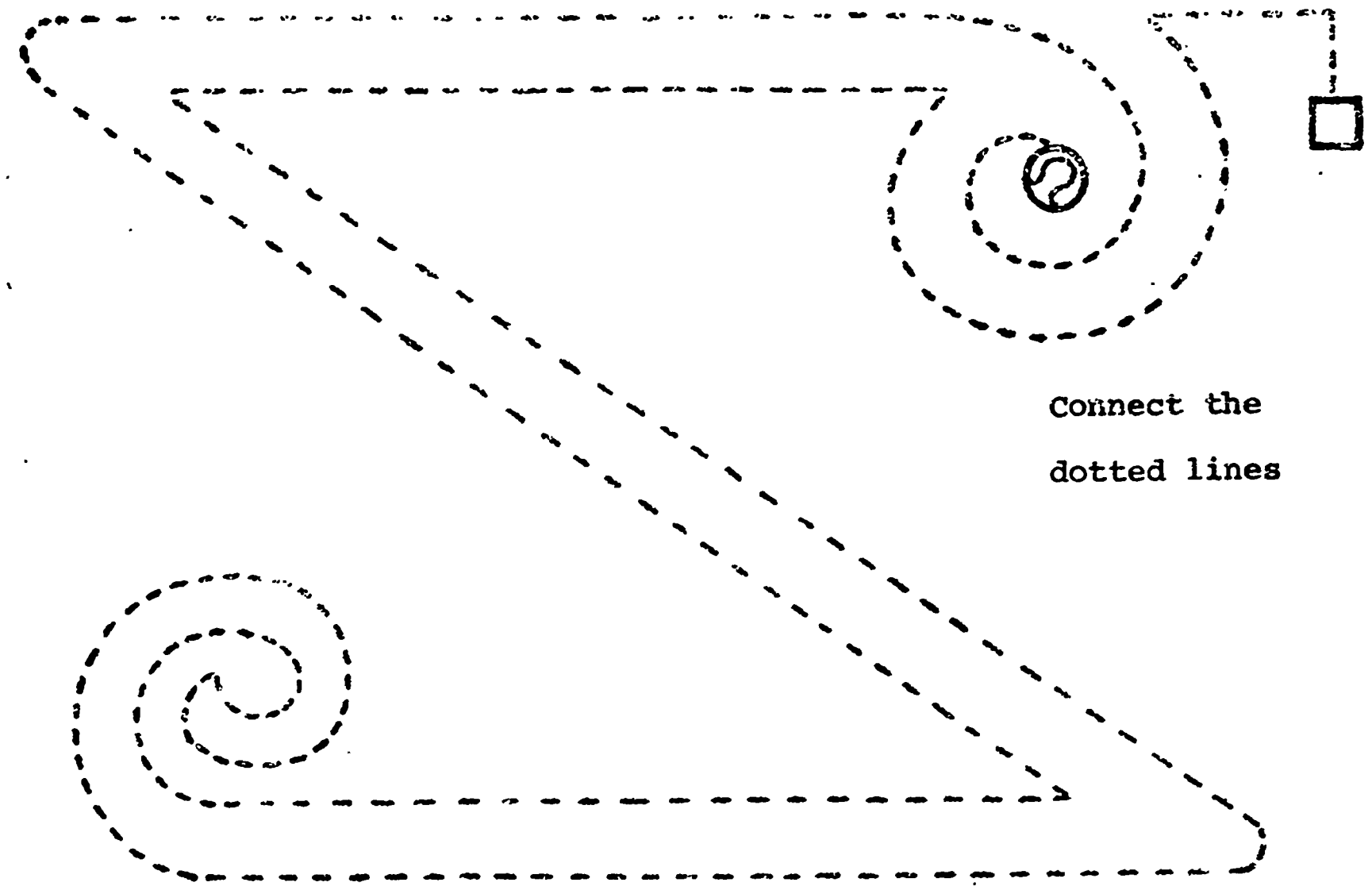
APPENDIX E

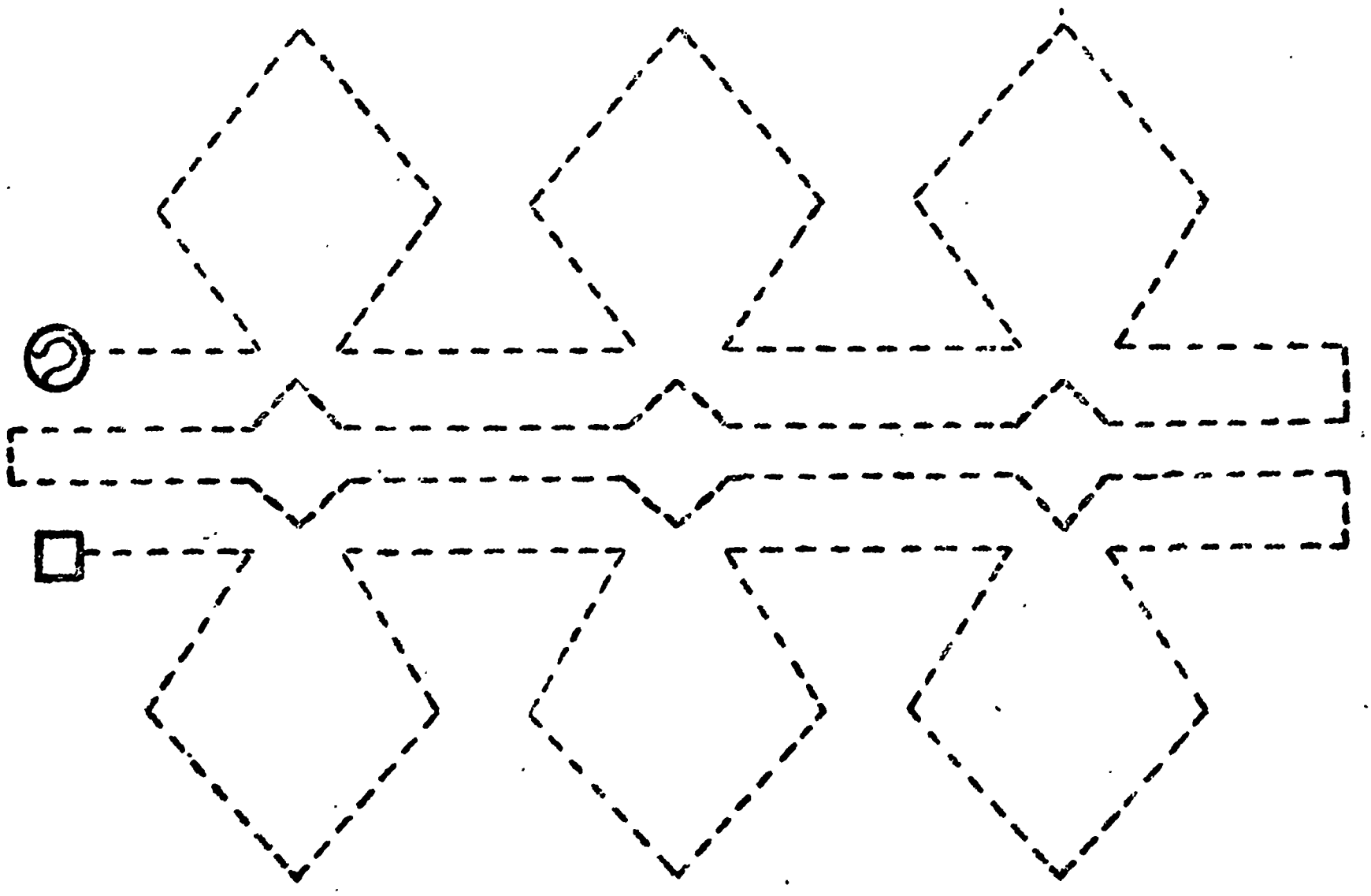
Connect the dots Sample Papers



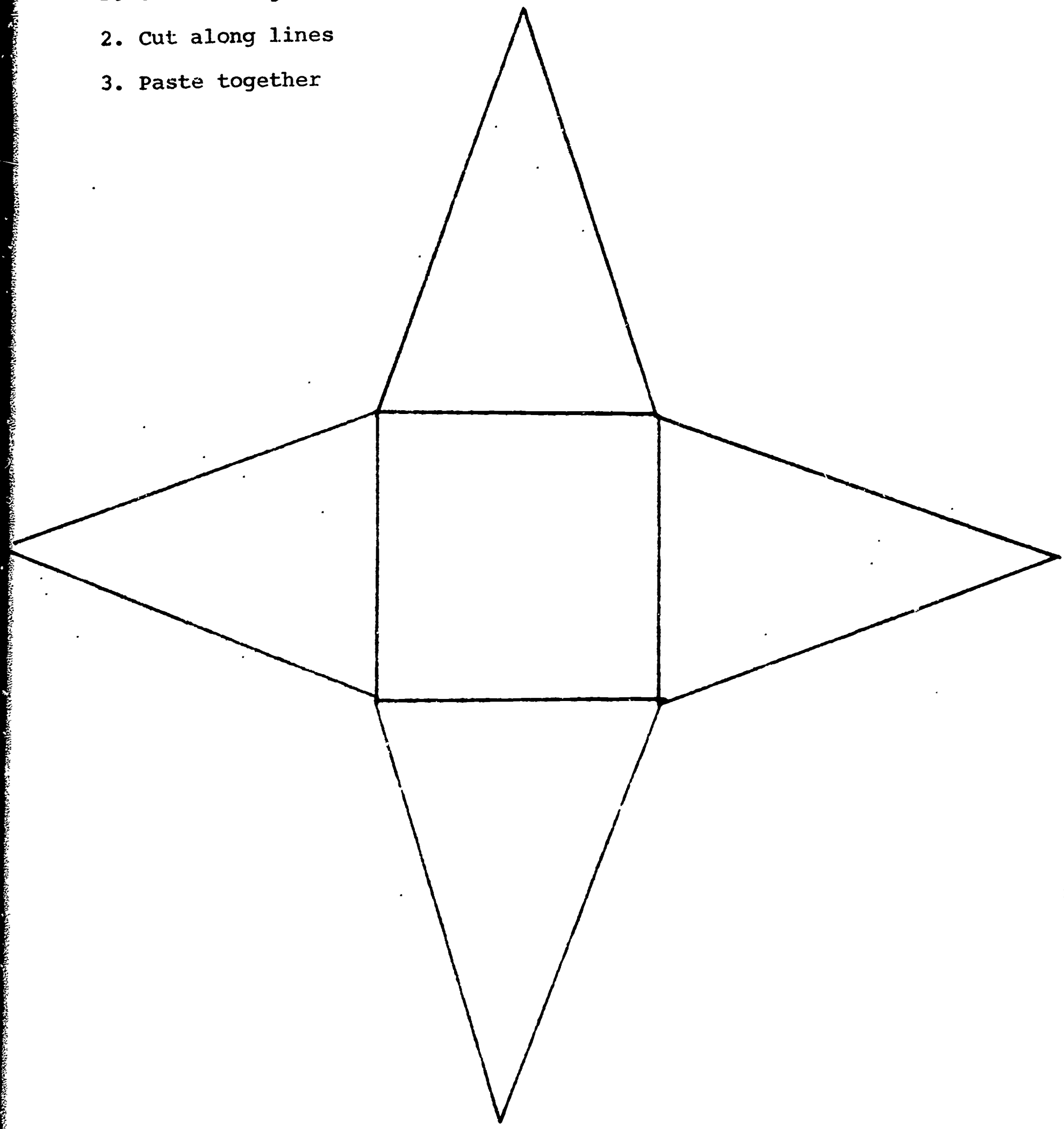


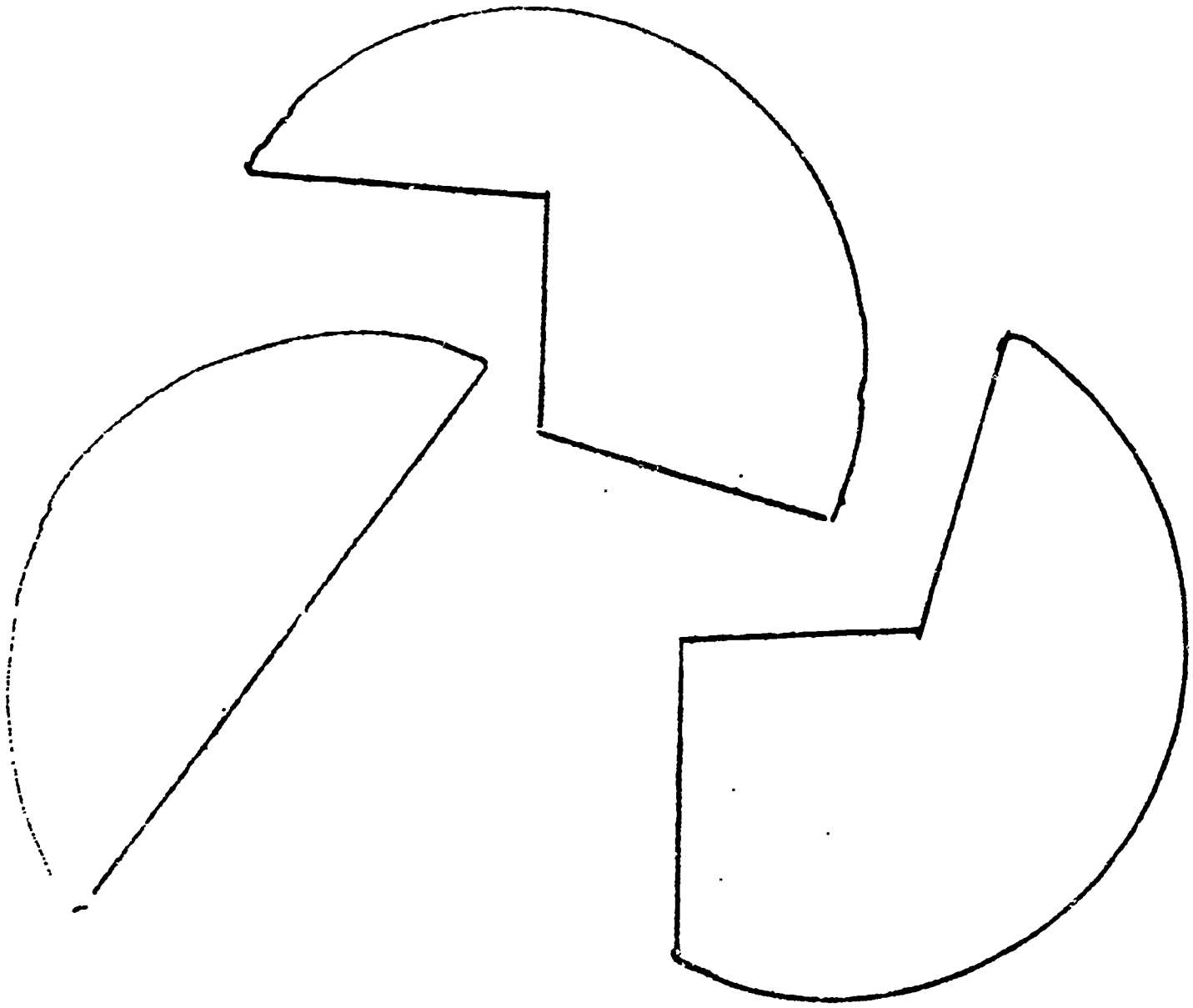



Connect the
dotted lines

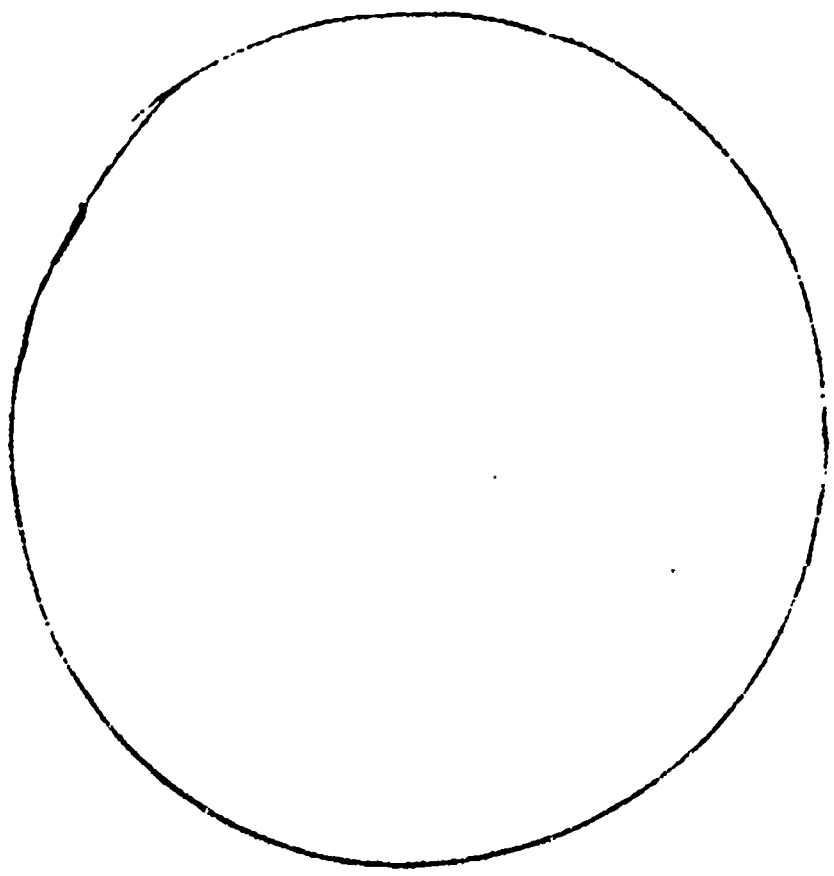


1. Color design
2. Cut along lines
3. Paste together

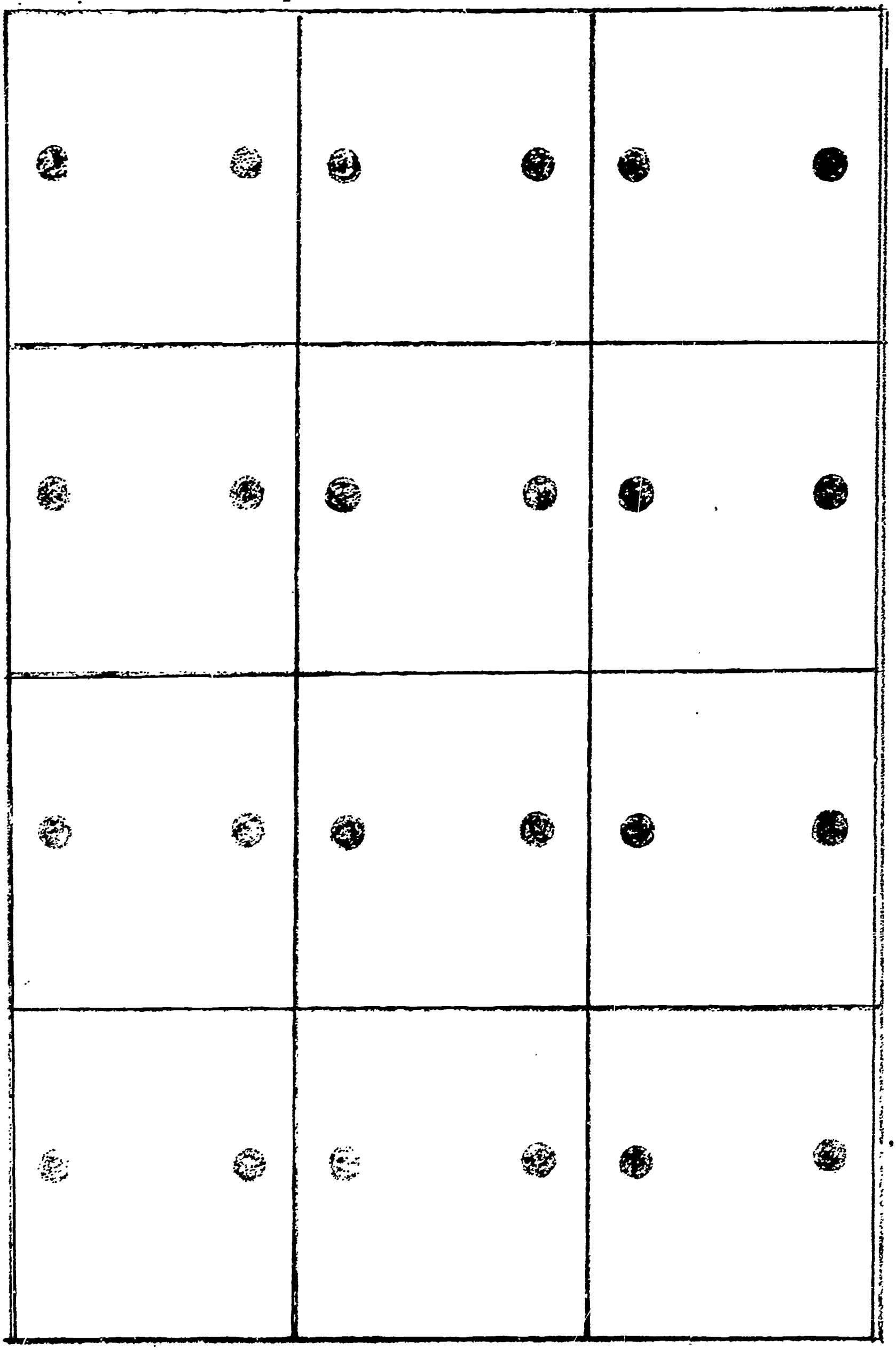


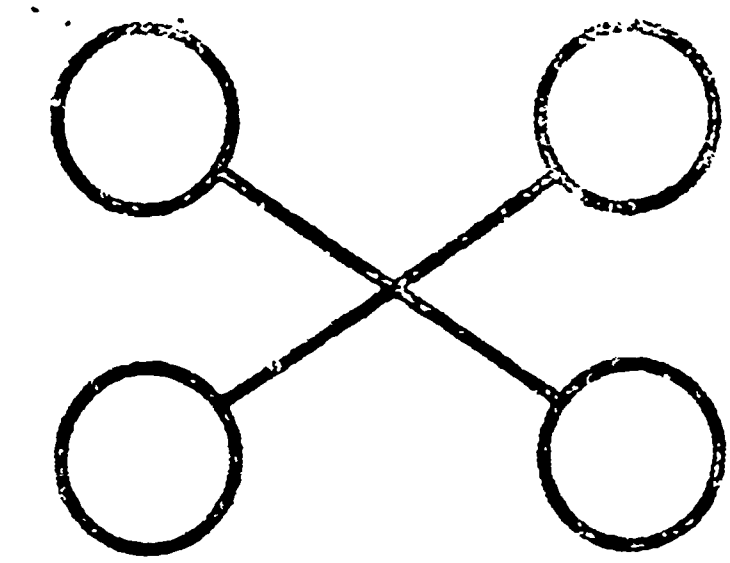


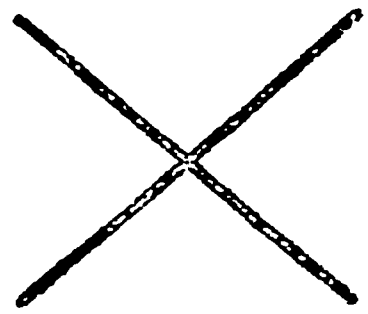
1. Color
2. Cut
3. Paste

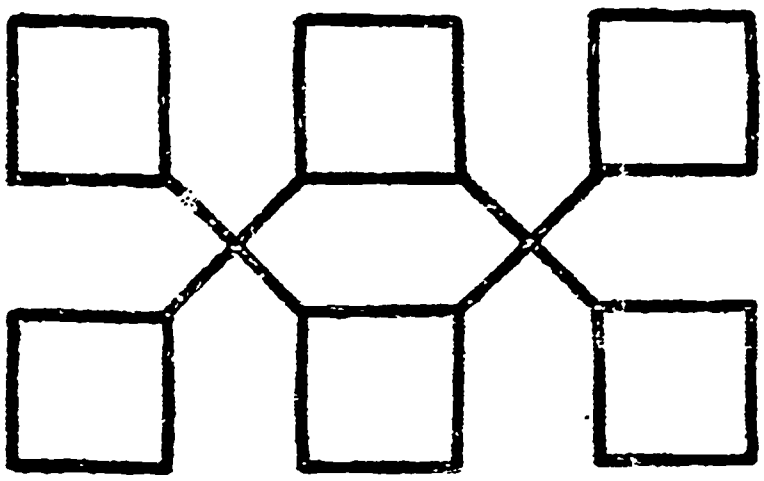


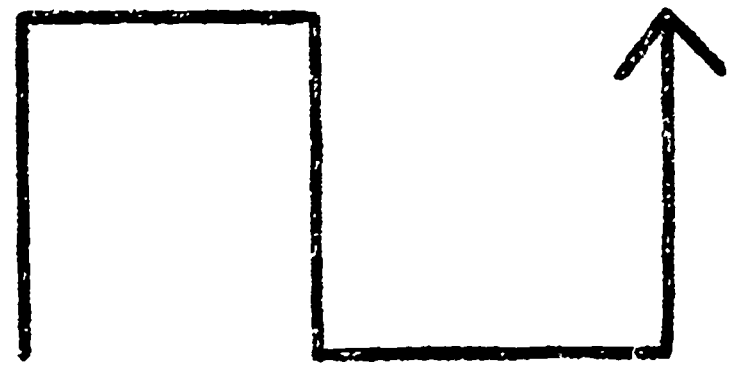
Draw a line from the left dot to the one on the right.
Go across and stop.

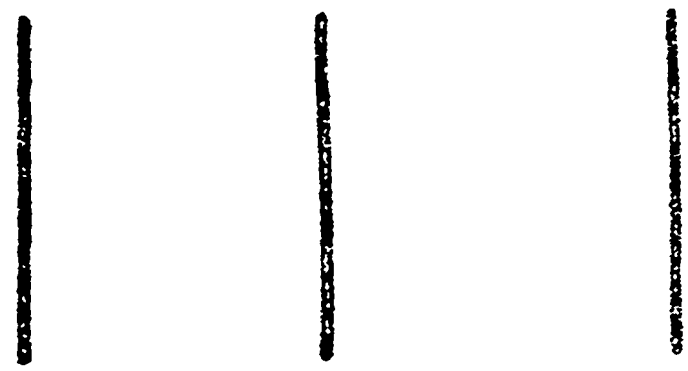


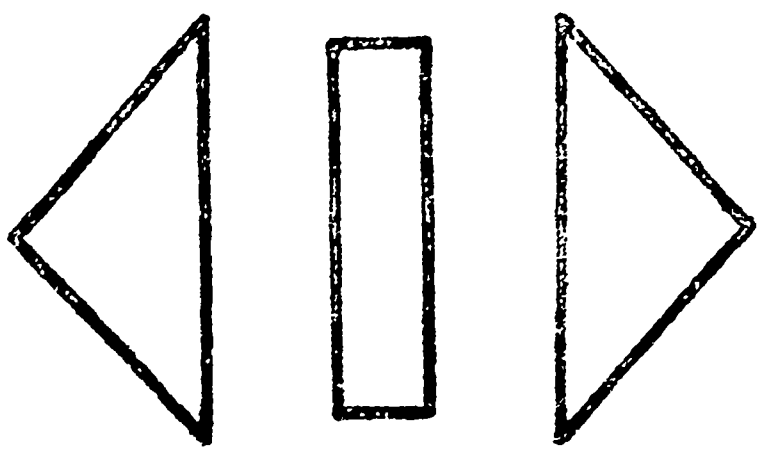


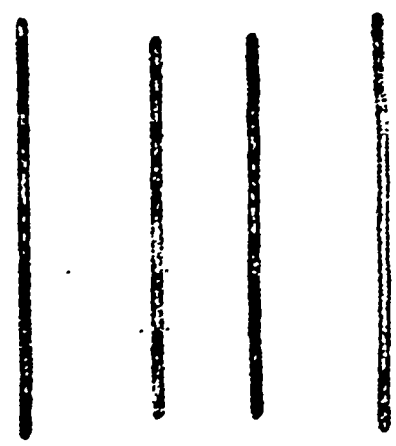


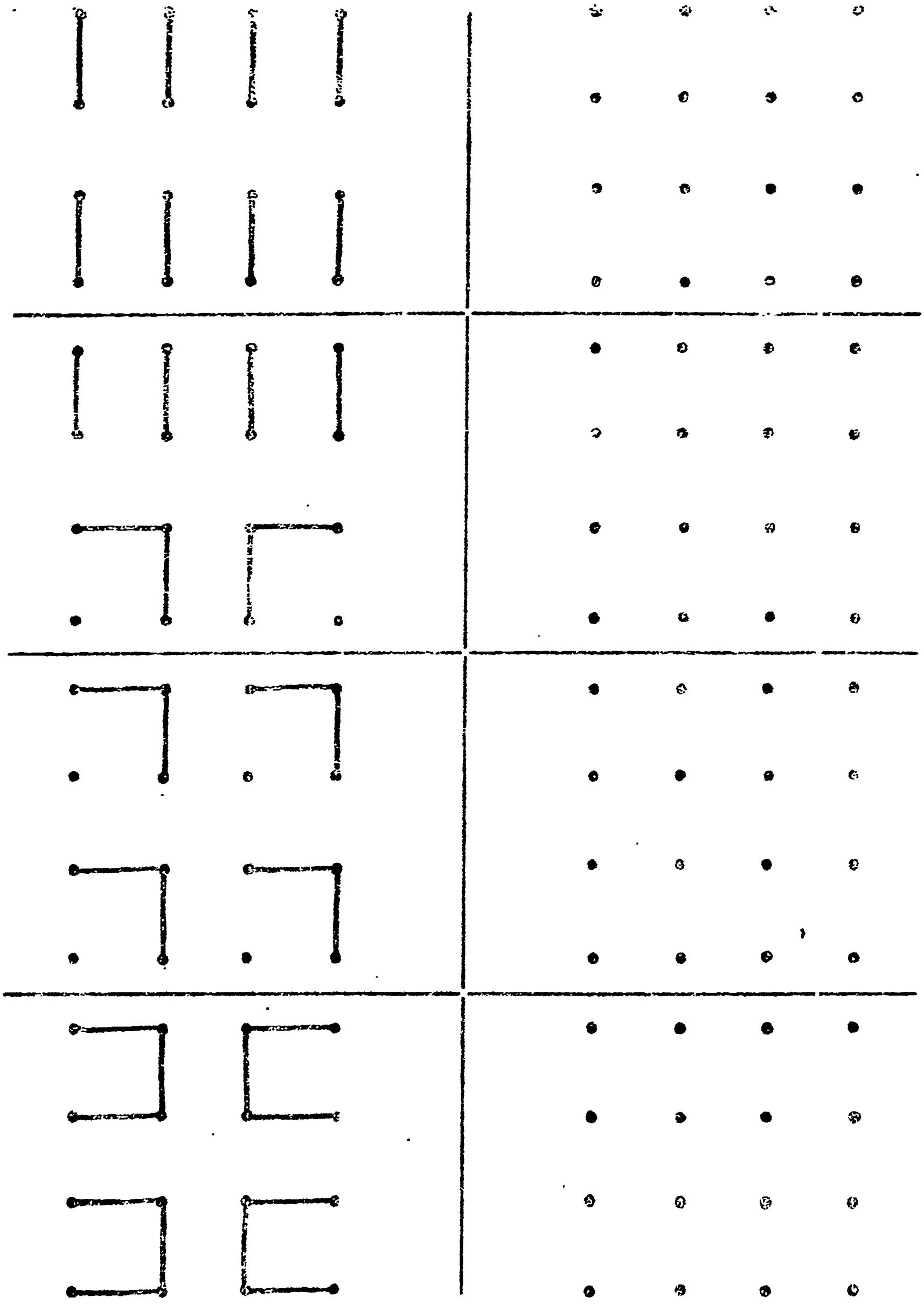


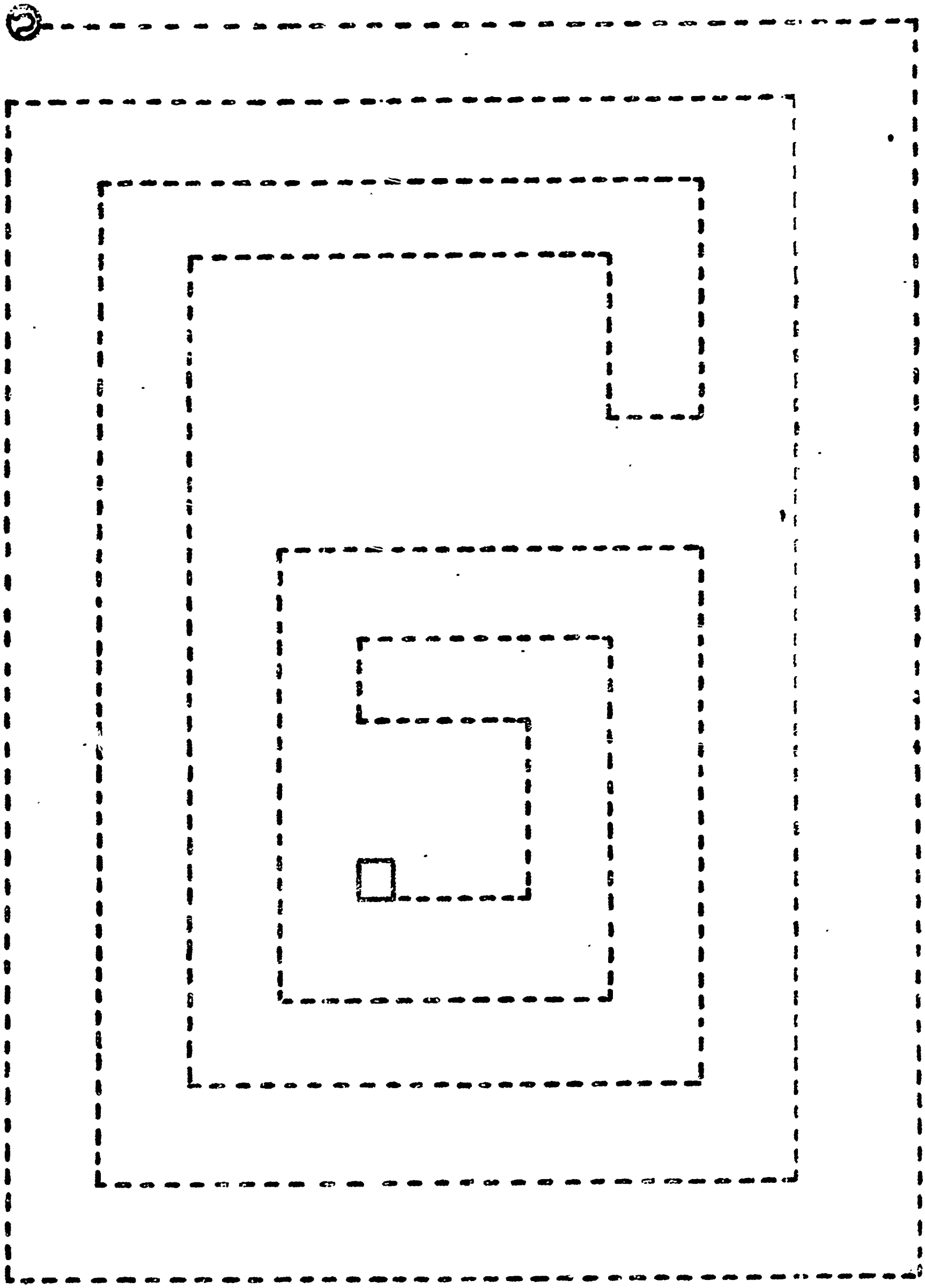












APPENDIX F

MATERIALS

Peabody Language Kit, Level One
American Guidance Services, Inc.
Publishers Building
Circle Pines, Minnesota

Help Your Child Learn How to Learn
Marie Avery and Alice Higgins
Canhc Publishers
11291 McNab Street
Garden Grove, Calif.

Training in Some Prerequisites for Beginning Reading
Beth H. Slingerland
Educators Publishing Service
75 Moulton Street
Cambridge, Mass.

Primary Phonics
Barbara Maker
Educators Publishing Service

Learning the Letters
Margaret Gifford
Educators Publishing Service

Winterhaven templates
Templates for blackboards and for desk use.
Winterhaven Lions Research Foundation
Box 1045
Winterhaven, Florida

Pictures and Patterns - The Developmental Program in Visual Perception
Marianne Frostig
Beginning, Intermediate, and Advanced Student Workbooks
Follett Publishing Co.
Chicago, Illinois

Transparent overlays for use with workbooks
Follett Publishing Co.

Purdue Perceptual Motor Survey
Roach and Kephart
Chas. Merrill Books
1300 Alum Creek Drive
Columbus, Ohio

Puzzees Tracing Book
Puzzees Education Aid, Book One
Perception Aid, Inc.
P.O. Box 2161
Livonia, Michigan

Lower Case Sandpaper Alphabet
Upper Case Sandpaper Alphabet
Metal Insets
Mixed Shape-finder
Senior Shape-finder
Sorting Box
A. Daigger Co.
10 Tenth St.
Richmond California

Tooti-net and bouncers
Creative Ideas
5328 W. 142nd Street
Hawthorne, California

Grease pencils, black, green, red, blue
Vroman's
Pasadena, California

SRA Lift-Off to Reading Cycle I
Science Research Associates, Inc.
259 E. Erie Street

My Own Book for Listening, Reading Lab Ia
Don H. Parker, Genevieve Scannel
Science Research Associates

The Five Senses (record)
Bowman Records
10515 Burbank Blvd.
North Hollywood, Calif.

The Development of Body Awareness and Position in Space (record)
Developing Perceptual Motor Needs of Primary Level Children (record)
Educational Activities, Inc.
Freeport, New York

Disappearing Ink pens
Ann Arbor Publishers
610 South Forest
Ann Arbor, Mich.

Reading Readiness Workbooks
Jerbert Goldstein and Edith Levitt
Follett Publishing Co.
1010 W. Washington Blvd.
Chicago, Ill.

Auditory Discrimination
Spatial Discrimination
Visual Discrimination
Concept Discrimination

Plastic clay (plasticene)
Play-Doh in various colors
Palfrey's School Supply
7715 East Garvey Blvd.
South San Gabriel, Calif.

Large truck inner tube

Circular balance boards with square and round bases

Walking boards - 4" walking surface x 12' in length
2" walking surface x 12' in length

Locks and keys

Nuts and bolts in assorted sizes

Sponges

Jars with lids

Assorted fabrics for tactile discrimination

Puzzles

Sequence cards

Shoe laces and punched cards

Screws and screw drivers

Hand puppets

Doweling

Plastic tubing

Rhythm instruments

Story books and records

Film strips

Tape recorder

Listening post (headsets for five or six children)

Balls of various sizes

Hoops

Scissors, paste, colored paper, crayons, etc.

APPENDIX G

Sample lesson plans

A day in the first week

8:00-8:20 Winterhaven template (circle) on blackboard.
Stress counter-clockwise motion.

8:20-8:40 Auditory discrimination test (individual)
Those children not being tested can be working with small muscle activities - jars, lacing, clay, screwdrivers, locks.

8:40-9:00 Peabody Language Kit - Lesson two

9:00-9:30 Motor skills - balance boards, walking board, inner tube.

9:30-9:50 Cutting and pasting paper

9:50-10:00 Story

A day in the second week

8:00-8:20 Frostig workbook - Beginning, page nine, for half the group.
Others - tape record what they saw when they first woke up this morning.

8:20-8:40 Find all round objects in the room.
Find all square objects in the room.

8:40 - 9:00 Winterhaven templates (circle and square) on blackboard.

9:00-9:20 Motor skills equipment. Stooping to walk under a ruler placed across the backs of two chairs, gradually lower ruler so child must adjust his body to the lowered height.
Ball catching and throwing.
Walk on walking board, placing heel to toe.

9:20-9:30 Matching clapped patterns.

9:30-9:45 Listening workbooks

9:45-10:00 Sorting games - concept formation - nails, buttons, screws, etc.

A day in the fourth week

8:00-8:20 Winterhaven templates. (circle, square, triangle) Trace first at blackboard, then at seats on papers, then reproduce forms by looking at the template without tracing.

8:20 -8:40 Auditory perception. Who can tell what is making this sound? Snap fingers, close a book, tear paper, bounce a ball, tap on wood, sharpen pencil. (Children close eyes.)

8:40-9:10 Motor skills. Walk through dowels (3' lengths) set about fourteen inches apart without touchigg them.
Running dive onto mat without touching inner-tube held upright.
Walking backwards on walking board, broadside and then narrow.

9:10-9:25 Film strip - Little Toot

9:25-9:50 Frostig workbooks (Beginning and Intermediate, continuing)

9:50-10:00 Automatic language practice - finish sentence giving correct form.
e.g. I am going swimming
Yesterday we _____

I only have one apple but I want two _____.

A day in the sixth week

8:00-8:15 Developing Right-Left Discrimination
First with eyes open, then with eyes closed.
Show me your left hand.
Show me your right foot.
Show me your right knee.
Show me your right thumb.
Show me your left ear, and so on.

With chairs play"Simon says"
Stand on the right side of your chair.
Go behind your chair.
Stand in front of your chair
Put your hands under your chair, and so on.

8:15-8:30 Audibory Discrimination
Are these words alike or different? Put your hand up if they are alike.
Rain-pain, name-main, tall-tall, mill-sill, ball-bell, cat-rat, fall-fall, etc.

Pantomime- Have children guess what you are doing.
Hammering, writing, sweeping, catching a ball, etc.

8:30-9:00 Motor skills. Equipment. Hopping in a 12" circle drawn on the floor. Balance boards - square base and for some the round base. Tooti-bounce.

9:00-915 Frostig workbooks or workpapers.

9:15-9:30 Story

9:30-9:40 Relay race with rolling ball

9:40-10:00 Listening workbooks and paste and cut papers.