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The relationship of readiness factors to Jan. first grade reading achievement

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THE RELATIONSHIP OF READINESS FACTORS TO JANUARY FIRST GRADE READING ACHIEVEMENT

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CHAPTER I

INTRODUCTION

What is important in a first grade reading readiness program to insure success in reading to the majority of children in the program? Is practice on motor skills such as coloring, tracing and cutting necessary for readiness to read? Does the ability to discriminate visually between words, objects, numbers and letters before beginning to read make reading easier for the child to learn? How important is auditory discrimination to a pre-reading program? Does mastery of the ability to hear rhyming words aid in beginning reading? Should a child be able to tell the initial consonant of a word spoken orally to him? Is it important that we include the ability to discriminate between words beginning alike and those not? Is learning to hear the final consonant in a spoken word important? How large a part should oral language play? Should a large allotment of time be spent on learning to interpret pictures? Is it important that the child be able to tell stories from pictures and tell the events in sequential order? Is the ability to classify objects of consequence in a readiness program?

The majority of commercial reading readiness workbooks stress the importance of a combination of the development of auditory discrimination, motor skills, language development and visual discrimination. However, some authorities and educators question the importance of stressing all four areas in a reading readiness program since there is doubt that all are equally important for success in reading. This study is an attempt to get further information on what should be important to a reading readiness program through the administration of original tests in these four areas to a group of first grade children.

Durrell defines reading readiness as follows:

> The reading-readiness period is one in which children are given the backgrounds for beginning reading: perceiving sounds in spoken words, learning letter names and forms, acquiring the beginnings of a sight vocabulary. Some children will acquire these abilities adequately for first-grade reading before coming to school. Others will learn them in kindergarten if the program includes ear training and the ability to read and write letters and a few words....
>
> The activities of the teacher at the reading-readiness period are the following: fitting instruction to learning rate for words, teaching the forms and names of letters, and teaching the child to hear the sound structure of words.[1]

Hildreth maintains that:

> Within recent years teachers overburdened with large classes have tended to interpret the 'readiness period' as a daily practice period with expendable paper booklets for marking, cutting, and pasting, preparatory activities with the A B C's, auditory exercises for ear training, drills for visual word discrimination and for left-to-right directional orientation, and other exercises to precede and prepare for the use of the first preprimers. This is not only a narrow interpretation of readiness, but there is no clear-cut evidence as to the value of some of these exercises as preparation for reading....[2]

Yokam states that there is no scientific data which proves that the commonly used types of readiness training actually accomplish that purpose. It is suggested that the schools and teachers give the idea of readiness programs a thorough testing He goes on to say, "...lacking experience, guidance, and control, the teacher may blissfully elaborate reading readiness beyond any reason and consequently delay teaching children to read rather than develop their readiness for it."[4]

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[1] Donald D. Durrell, Improving Reading Instruction (Yonkers-On-Hudson, New York: World Book Company, 1956), p. 24.

[2] Gertrude Hildreth, Teaching Reading (New York: Henry Holt and Company, 1958), p. 167.

[3] Gerald A. Yoakam, Basal Reading Instruction (New York: McGraw-Hill Book Company Inc., 1955), p. 112-113.

[4] Ibid., p. 115.

Russell says that readiness books which do not require formal reading "...stimulate discussion, develop concepts, foster understanding of sequence in a story, and give practice in simple visual and auditory perception..." which are important for early reading success.[5]

"Modern readiness books," declares Witty, "are designed to interest the child in reading as a pleasant and profitable experience;..."[6] He goes on to say that items stressing visual and auditory discrimination, or sequence of ideas are parts of a broad developmental program and do not indicate a neglect of the mechanics of reading.[7]

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[5]David H. Russell, Children Learn to Read (Boston: Ginn and Company, 1949), p. 130.

[6]Paul Witty, Reading in Modern Education (Boston: D. C. Heath and Company, 1949), p. 73.

[7]Ibid.

CHAPTER II

REVIEW OF RESEARCH

For the purposes of this study, research on reading readiness has been divided into four categories and is presented in the following pages under the headings of: auditory discrimination, language development, motor skills, and visual discrimination.

I. AUDITORY DISCRIMINATION

Research has shown that one of the skills for success in learning to read which children should possess is the ability to hear likenesses and differences in words and word elements. Poor auditory discrimination has been found to be one of the weaknesses among failures in reading.

Monroe studied the influence of poor auditory discrimination upon reading defective cases at the Institute for Juvenile Research in 1932, and found that lack of precise auditory discrimination impeded the learning which involved auditory impressions. She reported a correlation of .66 plus or minus .04 between the scores on auditory tests for reading readiness and reading achievement. This correlation was higher than were any of the other scores on a battery which included tests in language, motor, visual, and articulation skills.[1]

The importance of auditory discrimination was pointed out by Acomb. In this study it was discovered that auditory, as well as visual, perception is a very significant factor in relation to reading ability. Visual and auditory discrimination were found to be very definitely interrelated.[2]

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[1] Marion Monroe, Children Who Cannot Read (Chicago: University of Chicago Press, 1932), pp. 93-95.

[2] Allan Acomb, "Study of the Psychological Factors in Reading and Spelling" (unpublished Master's thesis, Boston University, Boston, 1936).

Dolch and Bloomster worked on ear training and decided it may begin early. They believed that children can learn to notice similarities between sounds before a phonics program is actually in use.[3]

Following a four year investigation of reading readiness and reading progress in the kindergarten Wilson and others found that kindergarten and first grade children who knew the most letter forms and sounds tended to be among the first to read and to be the best readers. The converse of this was also true.[4]

Harrison concluded:

> The child first learns to attack meaning to printed symbols through the medium of spoken language. He not only needs a high degree of auditory acuity, but he also needs the ability to perceive and reproduce sounds correctly, the ability to fuse sounds into words, and the ability to sense or perceive the sounds characterized by certain auditory frequencies.[5]

Murphy and Junkins studied the effectiveness of formalized program of ear training in beginning reading. The program consisted of thirty ten-minute lessons. The children who were making little progress in the first grade at the end of the first semester were divided into groups. One group received training in auditory discrimination, while the control received no special training. After a period of six weeks the groups were retested with these results.

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[3]E. W. Dolch, M. Bloomster, "Phonic Readiness," Elementary School Journal, XXXVIII (November, 1937), pp. 201-205.

[4]Frank T. Wilson, Cecile Fleming, Agnes Burke, Charlotte G. Garrison, "Reading Progress in Kindergarten and Primary Grades," Elementary School Journal, XXXVIII(February, 1938), pp. 442-449.

[5]Lucile M. Harrison, Reading Readiness (Boston: Houghton Mifflin Co., 1939), p. 26.

1. "In auditory discrimination, the group given special instruction showed marked progress while the other groups made little or no gain.

2. The two experimental groups learning rate was doubled while the control group made little improvement."[6]

Carroll studied sex differences in readiness skills and the results showed statistically significant differences appear during the reading readiness period. Since they were found prior to formal teaching, such differences appearing later in any measurement of achievement are not due to teaching alone. Twenty four tests of a battery favored the girls as compared to fourteen for the boys.[7]

Tufts evaluated several types of auditory discrimination tests with 201 children in grade one. The tests included knowledge of medial sounds, rhyming words, initial and final consonants and blends.

"It would seem from this study that auditory discrimination tests of rhymes and middle sounds in words are not of such great value as those testing initial and final consonants and beginning blends."[8]

In this same study, "correlation showed that chronological age, or maturation, had little effect on auditory discrimination."[9] Even the correlation between auditory discrimination and mental age was rather low."[10] The correlations were -.23 for chronological age and -.37 for mental age.

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[6]Helen A. Murphy, Kathryn M. Junkins, "Increasing the Rate of Learning in First Grade Reading," Education, LXII (September, 1941), p. 38.

[7]M. W. Carroll, "Sex Differences in Reading Readiness" (unpublished Master's thesis, Boston University, Boston, 1941).

[8]Betty Raymond Tufts, "An Evaluation of Several Types of Auditory Discrimination Tests for Kindergarten and First Grade" (unpublished Master's thesis, Boston University, Boston, 1941), p. 34.

[9]Ibid., p. 33.

[10]Ibid., p. 34.

Murphy studied 540 first graders divided into four groups. The first one received concentrated auditory and visual training for ten minutes a day for thirty days. The second group received visual discrimination training for the same amount of time and the third group was given only auditory training. The fourth group, the control group, was given no extra training. Some of the results of this study are listed below.

1. All experimental groups were superior to the control group in Reading achievement in November, February, and June. At every measuring period after the auditory and visual discrimination exercises had been given, the experimental groups showed statistically significant superiortiy in reading achievement to the control group.

2. In the Detroit Word Recognition Test in November the three experimental groups were superior to the control group.

3. The individual Oral Reading Test in February showed the three experimental groups to be superior to the control group.

4. The Detroit Word Recognition Test in June showed the three experimental groups superior to the control group.

5. All experimental groups showed significant increases as compared to the control group in rate-of-learning test scores.[11]

It was also concluded that the lack of auditory discrimination, that is, the power to distinguish similarities and differences in sound of words, appears to be one cause for confusion in beginning reading. An analysis of the auditory tests given showed the order of difficulty of elements appears to be, initial sounds, initial blends, rhymes, and final consonants.[12]

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[11] Helen A. Murphy, "An Evaluation of the Effect of Specific Training in Auditory and Visual Discrimination of Beginning Reading" (unpublished Doctor of Education dissertation, Boston University, Boston, 1943), pp. 75-76.

[12] Ibid., p. 24.

Betts gave the following abilities as necessary for developing auditory discrimination:

> To develop the ability to observe likenesses and differences in the sounds of words.
>
> To note likenesses and differences in the initial sounds of words.
>
> To note likenesses and differences in the final sounds of words.
>
> To detect rhyming elements in words.[13]

A study based on 237 first grade cases enabled Biggy to report the order of difficulty of word elements in auditory discrimination. The relative order of difficulty of initial sounds are: g, r, h, s, p, j, n, t, l, m, v, w. For blends the order of difficulty was: ch, sp, tr, st, sh. For final consonants it was: y, s, t, k, l, n, g, p, d. Ing, an, un, and, at, were the order of difficulty for rhymes.[14]

She concludes:

1. Auditory discrimination, as measured by the tests used in this study, does affect reading achievement to some extent.
2. The relationship between auditory discrimination and reading achievement is not sufficiently close to warrant use of either auditory test in predicting reading success.[15]

In Kelley's study a group test of auditory discrimination was administered to 314 first grade children in June. The test results were analyzed in order to establish an order of difficulty of consonants and vowels and of vowels themselves.

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[13]Emmett A. Betts, Foundations of Reading Instruction (Boston: American Book Co., 1946), pp. 347-352.

[14]M. Virginia Biggy, "The Establishment of a Relative Order of Word Elements in Auditory Discrimination" (unpublished Master's thesis, Boston University, Boston, 1946), pp. 20-22.

[15]Dorothy W. Fagg, "A Study of The Relationship Between Auditory Analysis And Growth of Language Art Skills" (unpublished Master's thesis, Boston University, Boston, 1942), pp. 28-29.

Her findings indicate:

> In general, the vowel sounds reveal themselves as more difficult to hear than either beginning or final consonants. The short sounds of vowels as beginning sounds are the easiest to discriminate. Vowels in the middle of the word, whether long or short sounds, are difficult for the children to hear. This study also reveals that vowels vary in difficulty depending upon their position in the word and whether short or long sounds are used.[16]

Fahy conducted a study to establish an order of difficulty of word elements in auditory discrimination. She compared the order obtained with the results of the Biggy and Kelley studies. An evaluation was also made of a method of teaching in order to determine its influence on the learning in varying positions in a word.

Her results were:

1. There is apparently no set order of difficulty of word elements which remains constant in every situation.
2. Though both short and long sounds of vowels showed definite improvement after teaching, the percentages of error in this study indicated that in general vowels were more difficult than consonants.
3. The results of this study support the theory that long vowels are easier than short vowels.[17]

McKee states:

> To do well in beginning reading, the child must have sufficient power of auditory discrimination to distinguish readily between the pronunciations of words used in the beginning reading matter which he will attempt to read.[18]

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[16]Helen Irene Kelley, "Relative Difficulty of Auditory Perception of Word Elements" (unpublished Master's thesis, Boston University, Boston, 1948), p. 54.

[17]Anne Fahy, "Evaluation of Ear Training In Reading In Grade One" (unpublished Master's thesis, Boston University, Boston, 1949), p. 83.

[18]Paul McKee, The Teaching of Reading in the Elementary School (New York: Houghton Mifflin Company, 1948), p. 151.

He concludes further:

> .....that children's discovery of the fact that words are made up of sounds, that the same sounds occur in different words, and that a given word sounds almost but not exactly the same as another word is useful background for coping with beginning reading matter.[19]

Crossley evaluated the effect of lantern slides on the development of auditory and visual discrimination of word elements when presented to approximately 415 children in twenty first grades. Her results showed that:

1. The experimental group was superior to the control group in all analyses of auditory discrimination.
2. Children who are subjected to auditory discrimination of vowel sounds profit by such training.
3. In general, children who had higher scores in auditory discrimination attained higher scores in reading even though they were equal on the basis of mental age.
4. From the results of the testing it can be assumed that it is possible to teach letters as beginnings and endings at the same time without causing confusion.[20]

Bond and Bond believe that:

> Most children living in an environment of spoken words have developed the ability to make fine auditory discriminations. However, many children have not learned to isolate specific sound elements to the degree necessary to find the rhyming words in jingles or to isolate from a group of words those which begin with a specific sound.[21]

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[19] Ibid., p. 152.

[20] B. Alice Crossley, "An Evaluation of the Effect of Lantern Slides on Auditory and Visual Discrimination of Word Elements" (unpublished Doctor's dissertation, Boston University, Boston, 1948), pp. 134-135.

[21] Guy L. Bond, Eva Bond Wagner, Teaching the Child to Read (New York: The Macmillan Company, 1950), p. 118.

They further state the following:

> 'Inasmuch as the ability to make fine discriminations in the auditory pattern of words is needed, and as some children have not developed the skill in this ability that is necessary for generalizing in reading, some need training in oral word discrimination before or during initial instruction in reading. Here the tasks are to teach the children that words are made up of sounds and to get them to be alert to and to attend to similarities and differences in the sounds of words.[22]

Monroe drew several conclusions regarding auditory discrimination. Some of these are listed below.

1. 'Before most children are ready to read, they will profit greatly from learning more about the various qualities of sounds, with special reference to language. Long before the children are called upon to attack unknown printed words by phonetic or structural analysis, they should be laying down the foundations for success through adequate opportunities to develop auditory skills during the reading-readiness program.[23]

2. The child acquires the auditory skills necessary for reading by learning about sounds, by listening with the specific purpose of comparison and identification, and by acquiring a vocabulary of the terms by which he can communicate his observations about what he hears.[24]

3. Children who have learned to recognize the differences between sounds that are soft and loud, high and low, long and short, first and last, who can describe a few sounds in verbal terms such as like a bell, a crash, a bang, a whisper, or a buzz, and so on, and who have developed sensitivity to rhythm and time beat, are ready for the next steps in the auditory program---that of making the finer judgments and discriminations necessary to hear, within the total auditory impression of a word, the initial and final sounds, and to detect slight sound differences between words.[25]

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[22] Ibid., 156.

[23] Marion Monroe, Growing into Reading (New York: Scott Foresman and Company, 1951), pp. 111-112.

[24] Ibid., p. 117.

[25] Ibid., p. 125.

Bresnahan studied the effectiveness of a planned program to develop auditory discrimination of sounds in words using recordings as a self-teaching device in the kindergarten. Tests were administered to 462 kindergarten children to measure skill in auditory discrimintaion; to obtain learning rate; and to obtain mental age. The experiment covered a period of six weeks.

The test results showed:

1. Both the control and experimental groups showed tremendous and significant gains in auditory scores.

2. The records were more effective with children who had, initially, zero auditory scores than current, approved teaching techniques.

3. The records are as effective, for children with high ability in auditory discrimination, as current, approved teaching techniques.[26]

Tinker stated:

> Skill in distinguishing auditory patterns is extremely important in learning to read. While some children will need the training more than others, all will profit by some practice prior to and during beginning reading. For instance, the child will need to distinguish between the sounds of dog and dig, big and bug, hat and hot, and so on. Acquisition of the ability to distinguish not only between the more confusing sounds as broad and board, is an essential part of preparation for reading.[27]

Durrell and Murphy state the importance of the ability to notice separate sounds in spoken words on the basis of their observations in the Boston University Reading Clinic.

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[26] M. Marie Bresnahan, "An Evaluation of Recordings for Teaching Auditory Discrimination of Word Elements for Beginning Reading" (unpublished Doctor's dissertation, Boston University, Boston, 1952), pp. 101-103.

[27] Miles A. Tinker, Teaching Elementary Reading (New York: Appleton-Century-Crofts, Inc., 1952), pp. 62-63.

> Almost every child who comes to the clinic with a reading achievement below first grade has a marked inability to discriminate sounds in words. Children who are severely handicapped in this ability seldom achieve primer level in reading."....."Although there are many factors which combine to determine the child's success in learning to read, it is apparent that his ability to notice the separate sounds in spoken words is a highly important one."[28]

Dolch states that:

> What first graders need most in sounding is ear training. They need practice in listening to words and to word parts. After ear training, first grade children need to discover that words that begin with the same sound begin with the same letter."[29]

Gogolewski added exercises used in speech correction to increase auditory discrimination in reading. Forty lessons were taught to 630 first grade children. The results were based on 571 cases of which 280 children were in the experimental group and 291 in the control.

She concluded:

> Auditory discrimination has a positive effect on reading achievement. When pupils were paired for mental age, those having higher auditory scores made higher achievement in word reading, sentence reading, and paragraph reading.[30]

Durrell stated:

> "Since the ability to notice sounds in spoken words is essential to learning to read a phonetic language, it is highly desirable to give the child this ability as soon as he encounters systematic teaching of reading. Almost all children will need some help in noticing the sounds in words.[31]

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[28]Donald D. Durrell, Helen Murphy, "Factors in Reading Readiness and Reading Disability," Education, LXXIII (May, 1953), p. 560.

[29]Edward W. Dolch, Methods in Reading (Illinois: The Garrard Press, 1955), pp. 333-334.

[30]Jean Isabelle Gogolewski, "Auditory Perception of Word Elements in Beginning Reading Through Visual and Kinesthetic Speech Clues" (unpublished Doctor's dissertation, Boston University, Boston, 1955), p. 147.

[31]Donald D. Durrell, Improving Reading Instruction (New York: World Book Company, 1956), p. 156.

Gavel investigated reading achievement at the end of grade one in relation to the status and growth of various word perception abilities, which were measured earlier in the year. The tests in June of auditory and visual discrimination had the highest correlations with reading achievement, .68 and .63 respectively.[32]

Gray and Reese state an interesting point:

"Children are sensitive to likenesses and differences in sounds to some degree; otherwise they could not have learned to talk."[33]

Strang and Bracken reported:

Recent research has shown that visual and auditory perception are clearly related to reading success, perhaps even more so than mental age. Auditory perception and discrimination are therefore important parts of a comprehensive word analysis program. Children first need help in hearing the sounds of words they have been using. This ability should be acquired before they are introduced to the letter or letters representing these sounds.[34]

Dawson and Bamman agree that:

"Introductory reading readiness books for the pupils' use abound in interesting exercises that will help children become alert to the sounds that make up spoken words."[35]

Betts states:

Inability to make accurate auditory discriminations may be caused by a hearing impairment, a perceptual disability, or the lack of experience. Fortunately the means are available to screen out the first two causes and most of the pupils can profit from well planned developmental activities. This type of developmental work is sometimes called "ear training".[36]

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[32]Sylvia Ruth Gavel, "Patterns of Growth in First Grade Reading" (unpublished Doctor's dissertation, Boston University, Boston, 1957), p. 149.

[33]Lillian Gray, Dora Reese, Teaching Children to Read (New York: The Ronald Press Company, 1957), p. 129.

[34]Ruth Strang, Dorothy Kendall Bracken, Making Better Readers (Boston: D. C. Heath and Company, 1957), p. 28.

[35]Mildred A. Dawson, Henry A. Bamman, Fundamentals of Basic Reading Instruction (New York: Longmans, Green and Co., 1959), p. 37.

[36]Betts, op. cit., p. 347.

Betts has set up these goals of instruction in developing auditory discrimination.

> This phase of readiness for reading deals with the skills and abilities required for discrimination between the sounds of words. Auditory discrimination is a crucial aspect of oral language development. Goals of instruction in auditory discrimination include the following items:
>
> I. Awareness of word elements in a sentence.
>
> II. Ability to discriminate between the likenesses and differences in the sounds of words.
>
> A. Ability to recognize identical sounds
> 1. initial sounds
> 2. final sounds
>
> B. Ability to distinguish between closely related sounds.
>
> III. Ability to pronounce, enunciate, and articulate words accurately.
>
> IV. Ability to follow directions.
>
> A reasonable degree of skill in auditory and visual discrimination appears to be essential to readiness for reading.[37]

According to this research auditory factors appear to be important in teaching beginning reading.

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[37] Ibid, pp. 351-352.

II. LANGUAGE DEVELOPMENT

In the current reading readiness workbooks great emphasis is placed on language activities through interpretation of pictures, classification of pictures of objects and interpretation of a series of pictures in sequence.

Dawson cites a study by Hughes in which it was found that a positive relationship between reading achievement and language usuage exits. The correlation - after being corrected for attentuation - was .67.[38]

Dawson adds the following concerning the importance of language to beginning reading:

> A child's ability to understand and use language orally is known to be a factor in reading readiness... Throughout the process of learning to read, previously learned language associations are an aid. The child's ability to express himself in language, oral or written, indicates his potential for progressing in reading and sets a limit to such progress. Maturity in language facilitates rapid growth in reading.[39]

> Until a child has a wide speaking vocabulary, enuciates clearly, talks in sentences and thinks and speaks sequentially, he can scarcely learn to read with comprehension and ease.[40]

In a study of children in early grade one, the results of over 100 tests and ratings of characteristics alleged to be involved in readiness for reading or ability to learn to read were obtained as soon as possible after the opening of school. The children were also tested on their ability in oral

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[38] Mildred Dawson, "Interrelationships Between Speech and Other Language Arts Areas," Elementary English, XXXI (April, 1954), p. 226.

[39] Ibid., p. 225.

[40] Ibid, p. 231.

composition, by completing a story begun by the examiner. From this part of the examination Gates and Bond found that there appeared to be little correlation between the length of the compositions or the number of ideas contained in them, but there was a reasonably high correlation between the general quality of the oral composition and success in learning to read.[41]

Betts also reports that language is related to reading achievement.

> Facility in the use of oral language appears to be highly related to achievement in beginning reading activities. This includes vocabulary and language structure. In most reading readiness tests, provision is made to appraise vocabulary. It is also important to appraise the pupil's ability to put these words together in a form suitable for communication. Since most beginning reading materials are written in short simple sentences, it would be necessary for a pupil to have acquired control over at least the structure of simple sentences. Since reading is only one step removed from the child's use of auditory symbols, it is reasonable to conclude that control over oral language is a prime pre-requisite to reading.[42]

Hildreth writes that children are not ready to read until they can speak well and listen attentively to conversation. Since reading is primarily a language skill any experiences that develop a child's ability to understand and to use language would prepare him for learning to read.[43]

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[41]Arthur I. Gates, and Guy L. Bond, "Reading Readiness: A Study of Factors Determining Success and Failure in Beginning Reading," Teachers College Record, XXXVII (May, 1936), pp. 679-685.

[42]Emmett A. Betts, "Factors in Readiness for Reading," Educational Administration and Supervision, XXIX (April, 1943), p. 216.

[43]Gertrude Hildreth, "Reading Programs in the Early Primary Period," Reading in the Elementary School, Forty-eighth Yearbook of the National Society for the Study of Education, Part II (Chicago, Illinois: University of Chicago Press, 1949), p. 60.

Artley reports that a "study of research and professional writings indicates the validity of the assumption that competency in oral language is an essential forerunner of interpretation of printed symbols."[44]

Strickland states that ease and confidence in language usuage are important in preparing for oral reading. During the early years, a child should be guided to strive for clear speech and free and adequate use of language since a child rarely reads orally better than he talks.[45]

In a list of major commonly accepted bases for judging a child ready to begin actual reading, Stock includes oral language facility. However, he goes on to state that in any average first grade class there will be a group of children who does not need a prolonged time in the reading readiness program such as those outlined by commercially prepared reading materials.[46]

Herr claims that development of language is an important instructional job during the reading readiness period.

> A command of oral English is essential to the mastery of reading because reading is only one step removed from the child's world of auditory symbols. The teacher must consciously attempt to add new words to the child's speaking vocabulary, and he must make the child curious about the meanings of these new words.[47]

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[44]A. S. Artley, "Oral Language Growth and Reading Ability," Elementary School Journal, LIII (February, 1953), pp. 321-328.

[45]Ruth G. Strickland, Language Readiness for Oral Reading, Supplementary Educational Monographs, Number 82 (Chicago, Illinois: University of Chicago Press, 1955), p. 12.

[46]Earle K. Stock, "Some Field Observations on Early-Grade Progress in Reading," Elementary School Journal, LV (May, 1955), pp. 518-519.

[47]Selma E. Herr, "Readiness for Reading," National Elementary Principal, XXXV (September, 1955), pp. 26-27.

Farrar conducted a study to evaluate the effect of a planned program of language enrichment in kindergarten on beginning reading achievement. She discovered that such a planned program in language enrichment does help in beginning reading, but does not affect reading achievement as shown at the end of the year. She also found that there was no significant difference in the scores on the total word meaning test between the experimental and the control group.[48]

Ragsdale believes "that we need to consider the general and the specific language background which is necessary to understanding in a particular reading situation."[49]

Betts has this to say about the importance of language to reading comprehension:

> The development of reading ability is primarily a problem in language. When a child is ready for reading, he has acquired a fund of information from his experiences and he has developed reasonable facility in the use of language for the purpose of dealing with those experiences.[50]

In a study that analyzed children's speaking vocabulary in relation to word meaning comprehension required for grade one reading Enright found that the children did not have a complete understanding of

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[48]Margaret Marion Farrar, "An Evaluation of the Effect of a Planned Kindergarten Program in Language Enrichment on Beginning Reading," (unpublished Master's thesis, Boston University, Boston, 1953), pp. 45-46.

[49]Ted R. Ragsdale, Conditions Essential for Effective Learning Through Reading, Supplementary Educational Monographs, Number 76 (Chicago, Illinois: University of Chicago Press, 1952), p. 17.

[50]Betts, op. cit., p. 199.

the word vocabularies in any of the experience fields included in the testing. She concluded that all groups tested needed special enrichment programs particularly in the fields of nature, insects, wild animals, farm, and birds.[51]

Bannon, Phillips, and Thompson independently conducted similar studies to discover the experiences and vocabulary understanding necessary to comprehend first grade reading. Each concluded that there was a definite need for wider experience and a program of word enrichment in kindergarten.[52]

Stone writes that reading readiness workbooks can effectively provide the experiences for the development of those concepts most widely used in preprimers and that this objective may be attained through an abundance of pictures and the conversational interpretation of them.[53]

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[51]Elisabeth Lenora Enright, "The Analysis of Kindergarten Children's Speaking Vocabulary in Relation to First Grade Reading Needs," (unpublished Master's thesis, Boston University, Boston, 1943), pp. 90-91.

[52]Mary Elizabeth Bannon, "Some Comprehension Problems in the Kindergarten," (unpublished Master's thesis, Boston University, Boston, 1950), pp. 59-61; Helen May Phillips, "A Survey of the Experience Background of First Grade Children," (unpublished Master's thesis, Boston University, Boston, 1952), p. 36; Helen I. Thompson, "A Study of Vocabulary Necessary for Reading in a First Grade," (unpublished Service Paper, Boston University, Boston, 1945), pp. 89-91.

[53]Clarence R. Stone, Progress in Primary Reading (St. Louis: Webster Publishing Company, 1950), p. 317.

Bond has the following to say about picture interpretation:

> When they enter school children have in a greater or lesser degree the ability to get meaning from pictures. Inasmuch as all modern programs of reading at the outset depend upon pictures to carry a great part of the action, ability to interpret pictures should be of fairly high order in the prereading program.[54]

Harrison cites eight instructional jobs that help to insure reading success. One of these is teaching the use of pictures to get the complete story. A teacher would begin with one picture in the reading readiness program and teach the children to interpret it correctly. After this initial step pairs and then series of pictures would be used to suggest a sequence of events, just as a series of pictures is used in a pre-primer.[55]

One suggestion Hildreth gives for showing children the practical use of books is to show pictures and ask the children questions about them.[56]

Gray points up the importance of picture sequence interpretation by writing that in a picture sequence plot the child is asked to inspect each picture for the purpose of finding out what is happening, after which he may be called upon to give his interpretation. To carry the thread of the plot he has not only to understand what is in the picture directly before him, but also remember what happened in the preceding picture and anti-

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[54]Guy L. Bond, and Eva Bond Wagner, Teaching the Child to Read (New York: The Macmillan Company, 1950), p. 121.

[55]M. Lucille Harrison, "Getting Them Ready to Read," National Education Association Journal, XL (February, 1951), p. 106.

[56]Hildreth, op. cit., p. 66.

cipate what is coming in the next picture. This activity, then is closely related to the eye-to-mind activity which occurs in following a sequence of thought-units in a sentence, or series of sentences.[57]

She further reports that the child who is able to tell a story as it is pictured in sequence and is able to draw inferences from the observations of the significant elements is more ready to deal with reading than the child who lacks the ability of making meaningful associations with pictures.[58]

Developing a sense of story sequence is cited by Stone as one of the most important factors in readiness for reading and training for this can be effectively provided in workbooks.[59]

Gray writes the following about classification in relation to reading readiness:

> One of the teacher's responsibilities is to develop concepts useful in interpreting stories in the pre-primer. Do the children sense classifications, for example, such as differences between pets and toys?[60]

She further states that "one of the signs of clear thinking is the ability to classify and put things together that belong together."[61]

The research indicates that language development is considered as part of a reading readiness program and that some phases appear to contribute to success in learning to read.

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[57]Lillian Gray, and Dora Reese, Teaching Children to Read (second edition; New York: The Ronald Press Company, 1957), p. 127.

[58]Ibid., p. 128.

[59]Stone, op. cit., p. 317.

[60]Gray, op. cit., p. 117.

[61]Ibid., p. 131.

III. MOTOR SKILLS

Motor coordination is often considered a factor contributing to success in beginning reading. The findings of studies in this area are not conclusive.

Gesell in his developmental studies included motor skills which emphasize the hand and eye coordination. At the five-year age level, he included under motor development: copying a square, a triangle, a diagonal, and a hexagon; tracing a cross, and copying a diamond in ink. Besides these, which are noted as motor skills, there are other items listed under "personal-social" and "adaptive behavior", which likewise include motor functioning.[62]

Monroe reports that poor motor control may result in reversals. Many children who have birth injuries; chorea or other physical ailments that result in lack of precision or unsteadiness in motor adjustments show reversal tendancies. These children are often unable to follow a line of words with the eye or even with the fingers. Reversals occur in losing the place and looking back to find it. Left-handed children who are forced to use the right hand may find their motor habits disrupted, with resulting loss of precision and of steadiness of control. Included in the Monroe Readiness Tests are measures of control and motor speed and steadiness.[63]

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[62] A. Lucius Gesell, Mental Growth of the Pre-School Child (New York: The Macmillan Company, 1925), pp. 100-134.

[63] Marion Monroe, Children Who Cannot Read (Chicago: University of Chicago Press, 1932), pp. 82, 99.

Betts suggests that one should observe if the child has difficulty in tracing with finger, crayon, or pencil, and whether or not he has difficulty in manipulation of scissors.[64]

He says:

> There probably is some degree of relationship between motor control and readiness for reading...Reading activities usually require precise oculomotor control for making rapid and accurate fixations, fairly accurate eye-hand control for pencil and paper activities, and some general motor control for the turning of pages and the careful handling of books...Unfortunately, the development of motor control often is given too little attention after the child leaves kindergarten.[65]

Saunders developed tests of motor skills and administered them to all of the first grade children in a small community. She correlated the results with success in beginning reading. The correlation was .027 the lowest of all which she concluded showed that "motor skills do not seem to be an important factor in reading readiness."[66]

McLeod says that in order to help eye-hand coordination, the following procedures should be utilized:

(a) Let the child have experience in learning to trace.
(b) Teach him to stay within the lines when coloring.
(c) Develop the ability to make cuts, neatly and exactly on the line.
(d) Encourage the child to draw and cut independently, as soon as possible, making his own original designs.[67]

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[64]Emmett Albert Betts, Foundations of Reading Instruction (New York: American Book Company, 1946), p. 233.

[65]Ibid., pp. 135-136.

[66]Alta M. Saunders, "The Relationship of Certain Readiness Factors to Achievement in Beginning Reading" (unpublished Master's thesis, Boston University, Boston, 1947), p. 21a.

[67]Louise McLeod, "Reading Readiness," Grade Teacher, 65: 103, March, 1948.

McKee maintains:

> Some young people have difficulty in beginning reading because they do not know that reading matter is to be observed from left to right. These pupils read more slowly than they need to, omit words, skip from one line to another before finishing the first line, and move from right to left inside of a line.[68]

Adams, Gray, and Reese state:

> In most of the reading readiness books...the child is presented with pictures, some of which are alike, others which vary in minor details...All in the row will be identical with the exception of one... Exercises of this type also train the eye to follow a row of objects from left to right. Where several rows appear horizontally, one below the other, the child receives practice in sweeping the eye from the end of the line at the right to the beginning of the next line below at the left.[69]

Bond and Wagner maintain:

> Most children entering the first grade have difficulty in maintaining the degree of orientation that is necessary to be effective with printed material. Some children find it difficult to keep their orientation in picture work and in drawing. They have little notion of the fact that words must be kept parallel to the horizon and must be interpreted from left-to-right and that the printed page must be read from top to bottom.[70]

With regard to motor control and proper use of equipment, Bond and Wagner state:

> It must be recognized that some children are immature in motor coordination. They have good attitudes toward handling equipment; they know what the equipment is for; but they do not have the motor coordination required to handle it well.[71]

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[68] Paul McKee, The Teaching of Reading in the Elementary School (Boston: Houghton Mifflin Company, 1948), pp. 154-155.

[69] Fay Adams, Lillian Gray and Dora Reese, Teaching Children to Read (New York: The Ronald Press Company, 1949), pp. 168-169.

[70] Guy Bond and Eva Wagner, Teaching the Child to Read (revised edition, New York: The MacMillan Company, 1950), pp. 159-160.

[71] Ibid., p. 174.

Bond and Wagner further assert:

> Much equipment is used in the teaching of reading. The children must be able to handle the usual classroom equipment. They must be able to handle a book; they must be able to use crayons, pencils, chalk, paper, scissors, paste, and other materials. These, of course, are skills which children have in varying degrees and which can be taught.[72]

In reference to reading readiness, Monroe states:

> Reading readiness activities are admirably suited to the transition period while movements of the smaller muscle groups are being brought into control. Reading-readiness activities prepare a child for success in reading, accustom him gradually to longer periods of quiet activity, and serve as an excellent transition from large-muscle activities to the small-muscle coordinations necessary for reading.[73]

Monroe further states:

> Coloring books and crayons are especially helpful because of the practice in handling books as well as the hand control necessary for coloring within a line.[74]

In reference to reading and clumsiness, Harris asserts:

> A considerable number of poor readers are generally clumsy. They are below average in athletic skill, awkward in walking and running, and make poorly formed letters and numbers in writing. While there does not seem to be any direct causal connection between awkwardness and poor reading, in some cases they may both result from the same condition.[75]
>
> No child is intentionally clumsy; when motor incoordination is very marked, it may be caused by something wrong in the child's nervous system, making a neurological examination desirable.[76]

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[72] Ibid., p. 126.

[73] Marion Monroe, Growing into Reading (New York: Scott, Foresman and Company, 1951) p. 49.

[74] Ibid., p. 54.

[75] Albert Harris, How to Increase Reading Ability (Second edition, Revised and enlarged. New York: Longmans, Green and Company, 1953), pp. 218-21

[76] Ibid., p. 31

Boynton et al gave tests in motor control on folding, cutting on a straight line, drawing a circle, and cutting on a circle as part of a battery of tests to measure the background skills of children entering grade one. The tests were scored as follows:

A. Folding
   Scoring was from 1 to 3.
   1. Edges met.
   2. Edges slightly irregular.
   3. Crooked fold - corners did not meet.

B. Cutting on a straight line
   Scoring was from 1 to 3.
   1. Perfectly cut on the fold.
   2. The cutting slightly deviated from the fold.
   3. The cutting was jagged and slightly irregular.

C. Drawing a Circle
   Scoring was from 1 to 3.
   1. A well formed circle.
   2. A slightly distorted circle tending toward the oval shape.
   3. Indistinguishable circle.

D. Cutting on a Circle
   Scoring was from 1 to 3.
   1. The cutting followed the line.
   2. The cutting deviated slightly from the drawn line.
   3. The cutting did not follow the circle drawn.[77]

In the motor tests the low scores indicated the best achievement. The children in the top quartile in reading achievement were superior on the motor tests to those in the lower quartile in reading achievement. The differences were not statistically significant, however.[78]

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[77] Katherine Boynton et al., "Differences in Reading Background Brought to First Grade" (unpublished Master's thesis, Boston University, Boston, 1954) pp. 28-29.

[78] Ibid., p. 90b.

Most recently, Durrell has concluded:

> Motor abilities often required by workbooks in reading are coloring, cutting with scissors, drawing lines and circles, tracing, pasting, folding, drawing lines between objects, turning pages, handling cards, and so on. However, few of these abilities require special training and are best developed by using them as they are required in lessons. Some pupils will be awkward and will need to be helped with the correct way of using scissors, holding a pencil, and other motor abilities. Help may usually be given individually and incidentally rather than a planned program. The development of motor abilities is of high importance in education and will be given a higher place in the elementary curriculum, but it does not appear to be important to success in beginning reading.[79]

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[79] Donald Durrell, Improving Reading Instruction (New York: World Book Company, 1956), p. 91.

IV. VISUAL DISCRIMINATION

Gray and Reese make the following statement about picture type visual discrimination exercises:

> The child who cannot detect likenesses and differences in a row of pumpkins cut like jack-o'-lanterns, with only minor deviations in the upward or downward turn of the mouth, is not ready to make the fine discrimination between a p and a q or an m and an n. Good habits of visual observation, as well as left-to-right directional progression, must be taught.
>
> . . . . . .
>
> A type of eye-training exercise presented in most of the reading readiness books consists of a series of forms on a line. For example, a triangle appears at the left, then a square and a rectangle, and finally another triangle exactly the same size as the first. If a child cannot decide which two forms are alike when the teacher asks him to circle the two similar forms, he is certainly not ready to differentiate between such words as was and saw, or on and no.[80]

Bond and Wagner state that the ability to discriminate between likenesses and differences has been isolated and studied revealing a relationship between this ability and the ability to read. They further state that:[81]

> The child begins to develop ability in word discrimination very early in life. First, he distinguishes between gross likenesses and differences in actual objects or things around about him. Before many months have gone by the child is able to distinguish between common things, such as between a cat and a dog. He develops the ability to discriminate to the level where he can distinguish between the visual symbols cat and dog. As the ability to make such discriminations is associated with success in learning to read, it is important to give direct training in seeing likenesses and differences in pictorial and word configurations to children in whom this ability is not sufficiently developed.[82]

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[80] Lillian Gray and Dora Reese, Teaching Children to Read (New York: The Ronald Press Company, 1957), pp. 125-126.

[81] Guy L. Bond, and Eva Bond Wagner, Teaching the Child to Read, (revised edition, New York: The Macmillian Company, 1950), p. 151.

[82] Ibid., pp. 153-154.

Durrell maintains that "visual-attention exercises on non-letter forms are for the children who are very low in attention, have difficulty in following directions, and have shown little interest in words." There is no evidence that such exercises bear any relationship to visual perception of letters and words. It is recommended that as soon as the child is able to match pictures, objects, and forms he should begin matching letters and learning letter names.[83]

Among the factors necessary for reading success Bresnahan includes "...(1) the ability to see likeness and differences; (2) the ability to remember word forms..." It is further stated that these abilities may be developed by specific training in visual discrimination.[84]

Goins in a study of visual perceptual abilities of 120 first grade children found correlations of total score on a series of fourteen visual tests correlated .417 with December reading scores and .497 with May reading scores. It was concluded from this study that a group of tests measuring the ability to keep in mind a figure against distraction and containing no verbal material which could distort correlations with reading skill have a common variance with reading achievement at the first grade level.[85]

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[83]Donald Durrell, Improving Reading Instruction (Yonkers-On-Hudson, New York: World Book Company, 1956), p. 80.

[84]Marie Bresnahan, "A Review of Research of the Effectiveness of Kindegarten Training" (unpublished service paper, Boston University, Boston, 1950), p. 52.

[85]Jean Turner Goins, Visual Perceptual Abilities and Early Reading Progress (Supplementary Educational Monographs, No. 87, Chicago: The University of Chicago Press, February, 1958), pp. 57-99.

Visual discrimination between word forms is a basic reading ability, maintains Betts, however this ability does not insure reading success. "It is possible to develop these skills in nonsense situations, but the teacher can hit two birds with one stone by developing visual discrimination as a part of reading ability."[86]

Hildreth points out that many words are closely similar and thus require maturity in visual discrimination. "Children who cannot distinguish forms well or who show immaturity in copying designs may have more trouble distinguishing word and letter forms than will other children."[87]

Harris states:

> Many young children pay attention only to the main characteristics of visual stimuli - the size, shape, and color - and ignore the details. When asked to match letters or words they make many errors, not because of faulty vision, but because they do not notice differences which are obvious to older children.[88]

McKee says:

> To provide training in visual discrimination, most courses of study in reading readiness suggest and children's commerical reading readiness books contain different types of exercises. Unfortunately, however, the great majority of these exercises center the child's attention upon the problem of distinguishing, not between the forms of printed words to be met in beginning reading matter, but between large objects such as circles and squares...Since the discriminatory power of most children by the time they enter school has advanced beyond the stage of that needed in making such decisions, since distinguishing between such objects probably has little to do with learning to read, and since the skill to be acquired is that of distinguishing between the forms of the printed words used in beginning reading matter, the types of exercises mentioned above are likely to be wasteful for those children.[89]

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[86]Emmett A. Betts, Foundations of Reading Instruction (New York: American Book Company, 1950), p. 332.

[87]Gertrude Hildreth, Readiness for School Beginners (Yonkers-On-Hudson, New York: World Book Company, 1950), p. 254.

[88]Albert J. Harris, How to Increase Reading Ability (third edition, New York: Longmans, Green and Company, 1956), pp. 33-34.

[89]Paul McKee, The Teaching of Reading in the Elementary School (Cambridge: Houghton Mifflin Company, The Riverside Press, 1948), p. 147.

Dolch believes that those children who persistently fail to distinguish words need to be kept longer in the pre-reading activities of distinguishing objects and pictures which are easier to identify than words.[90]

Murphy, who conducted a study involving 540 first grade children to evaluate the effect of specific exercises in auditory discrimination, visual discrimination and the combination of both on the learning rate, reading score, visual perception of words and auditory discrimination of sounds, stated in conclusion:

> All experimental groups were superior to the control group in reading achievement in November, February and June. At every measuring period after the auditory and visual discrimination exercises had been given, the experimental groups showed statistically significant superiority in reading achievement to the control group.[91]

In another experiment with first grade children Murphy found that children who had specific training in auditory and visual discrimination of word and letter forms were superior in reading achievement and learning rate to pupils without such training.[92]

Murphy and Junkins conducted a study of 150 children who had made little or no progress in the first semester of the first grade. One group was given 30 ten minute exercises in auditory discrimination. A second group was given exercises in visual discrimination which consisted primarily of matching letters and words, finding words in context and copying letters and words. These were graded in difficulty and pre-

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[90]Edward Dolch, Teaching Primary Reading (Champaign, Illinois: The Garrard Press, 1950), p. 65.

[91]Helen A. Murphy, "An Evaluation of the Effect of Specific Training in Auditory and Visual Discrimination on Beginning Reading" (unpublished Doctor's dissertation, Boston University, Boston, 1943), p. 75.

[92]Helen A. Murphy, "Insuring Success in Beginning Reading," Journal of the National Education Association, XXXV, (October, 1946), p. 383.

sented in a variety of ways. The third group was the control group. At the end of six weeks, testing indicated that the retention of words taught had doubled for the experimental groups while the control group increased its score only slightly. Three months later the Detroit Word Recognition Test was given. The experimental groups had scores of 12 and 13 as compared to a score of 7 for the control group.[93]

In a study to evaluate the effect of visual discrimination exercises upon beginning reading as measured by the following factors:

1. Effect on visual discrimination.
2. Effect on learning rate.
3. Effect on word recognition test scores.
4. Effect on auditory discrimination.

Junkins concluded:

1. In the visual discrimination test which is a specific measure of the teaching, the experimental group was superior to the control group, despite the fact that the control group had the advantage of a better mean mental age.

   The mean score of the control group was 27.02 as compared with 34.17 for the experimental group. It is evident that the ability to see likenesses and differences improves by specific teaching.
2. The visual discrimination exercises improved the rate of learning new words. The mean number of words learned by the control group was 2.76 as compared with 4.41 for the experimental group. The critical ratio was 5.3, this difference was statistically significant.
3. In the Detroit Word Recognition test the experimental group was superior to the control group. The mean number of words in the control group was 8.04 as compared with 12.84 for the experimental group. The critical ratio 3.8 which is statistically significant.[94]

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[93]Helen A. Murphy, and Kathryn M. Junkins, "Increasing the Rate of Learning in First Grade Reading," Education, LXII (September, 1949), 37-38.

[94]Kathryn M. Junkins, "The Construction and Evaluation of Exercises for Developing Visual Discrimination in Beginning Reading" (Unpublished Master's thesis, Boston University, Boston, 1940), p. 79.

Durrell states that:

> Two background abilities known to be important to beginning reading are visual-and auditory-discrimination of word elements. The minimum requirement in the first background ability, that of visual discrimination of word elements, appears to be the ability to match letters. If the child cannot tell letters apart, it is futile for the teacher to attempt to teach him words. He cannot attach meaning and name to a word that he cannot recognize when he sees it a few seconds later.[95]

Durrell further maintains that knowledge of letters is essential to success in first grade reading. Since children enter the first grade with varying degrees of experience with letters, tests of visual discrimination will help the teacher in discovering the level at which to begin reading readiness with pupils and will also indicate which letters need to be taught.[96]

Nicholson in a study of background abilities related to reading success found that 96 per cent of the first graders tested made scores higher than 22 on matching capital letters and 20 on lower-case letters indicating that much of the matching of pictures and geometric forms as found in many reading readiness programs is a waste of time for most children. In a test involving matching from memory, nearly 90 per cent of the first grade children were able to match more than twenty capital letters and 83 per cent were able to match more than twenty lower case letters.[97]

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[95] Durrell, op. cit., p. 42.

[96] Ibid., pp. 53-54.

[97] Alice Nicholson, "Background Abilities Related to Reading Success in First Grade" (unpublished Doctor's dissertation, Boston University, Boston, 1957), pp. 100-157.

CHAPTER III

ANALYSIS OF READING READINESS WORKBOOKS

Reading readiness workbooks from the following publishers were analyzed to discover areas included as well as types of exercises used. The nine publishers in the study are Allyn and Bacon, Incorporated, American Book Company, The Bobbs-Merrill Company, Incorporated, Ginn and Company, Macmillan Company, Row, Peterson and Company, Silver Burdett Company, Scott, Foresman and Company, and John C. Winston Company. The readiness workbooks were published from 1945 to 1958.

Prior to the analysis of reading readiness workbooks, leading authors in the field of reading were studied for their concept of reading readiness.

The workbooks were consulted to give us an overview of the readiness program. After becoming acquainted with the workbooks, definite terms that were understood by this group were agreed upon, and the workbooks were analyzed to determine the kinds of practice given. However, it should be noted in some instances, that the group's terminology differed from that of the authors'.

The workbooks were divided into five main areas, with subdivisions under each area. The main areas are auditory discrimination, language development, motor skills, visual discrimination, and word recognition.

The following pages are devoted to types of actual exercises found in current reading readiness workbooks. Each exercise includes directions from the workbook or the teacher's manual. The number of pages have been totalled for each type of exercise for the workbooks analyzed.

A chart was made of the nine selected publishers and their workbooks with a breakdown of skills under each area. A breakdown of the number of pages devoted to each skill was made, and the number of pages totalled for each subdivision and main area.

Three important areas under auditory discrimination included: (1) rhyming, (2) sounds, and (3) initial consonants.

Language development had six major classification, five of which were: (1) telling stories from pictures, (2) picture sequence, (3) anticipation of conclusion from a picture, (4) interpreting one picture, and (5) classification of objects all included in the test. Since dramatization had only six pages devoted to it, no test was constructed.

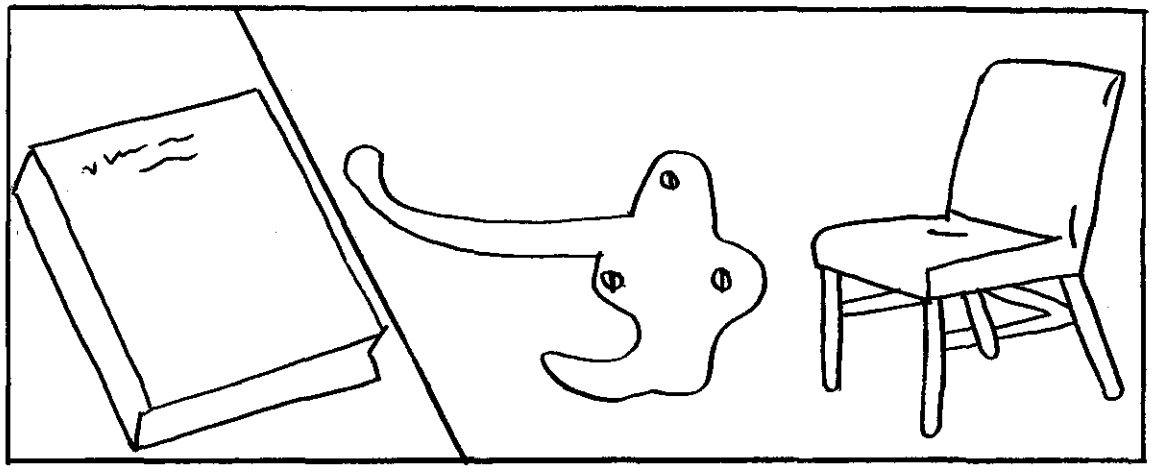
Motor skills were classified under eight headings. Tests were constructed for five of the eight skills which were: (1) cutting and folding, (2) coloring, (3) reproducing a pattern, (4) tracing pictures, and (5) a maze.

Eight skills were listed under visual discrimination of which five were tested. (1) matching words, (2) matching objects, (3) matching numbers, (4) picking out unlike objects and (5) matching letters.

Few items were included for word recognition so no test was developed.

Samples from the workbooks in each of the areas follow:

Directions: Have the pupils name the object pictured at the left and to give the rhyming name of an object pictured at the right.



[1]

FIGURE 1

AUDITORY DISCRIMINATION: RHYMING

(This type of exercise appeared 24 times.)

[1] William H. Burton, Clara Belle Baker, and Grace K. Kemp, Get Ready to Read (New York: The Bobbs-Merrill Company, Inc., 1950), p. 23

Directions: Let the pupil look at the picture and tell what the child is doing to make sound. Then ask them to imitate the sound.

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FIGURE 2

AUDITORY: SOUNDS (SUCH AS BELLS' TAPPING)VVV.

(This type of exercise appeared 8 times.)

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[2]William H. Burton., Clara Belle Baker, and Grace K. Kemp, Get Ready to Read (New York: The Bobbs-Merrill Company, Inc., 1950), p. 20.

Directions: Have pupils identify the objects shown in the upper left-hand corner. Discuss what is happening in the larger picture. Explain that when pupils were telling about the big picture, you heard some words that begin with the same sound as bed and boy.

Have the pupils practice saying the two words until they are familiar with the beginning sound. Then have them choose other objects in the picture which have the same beginning sound and draw a line from the bed to each chosen object.

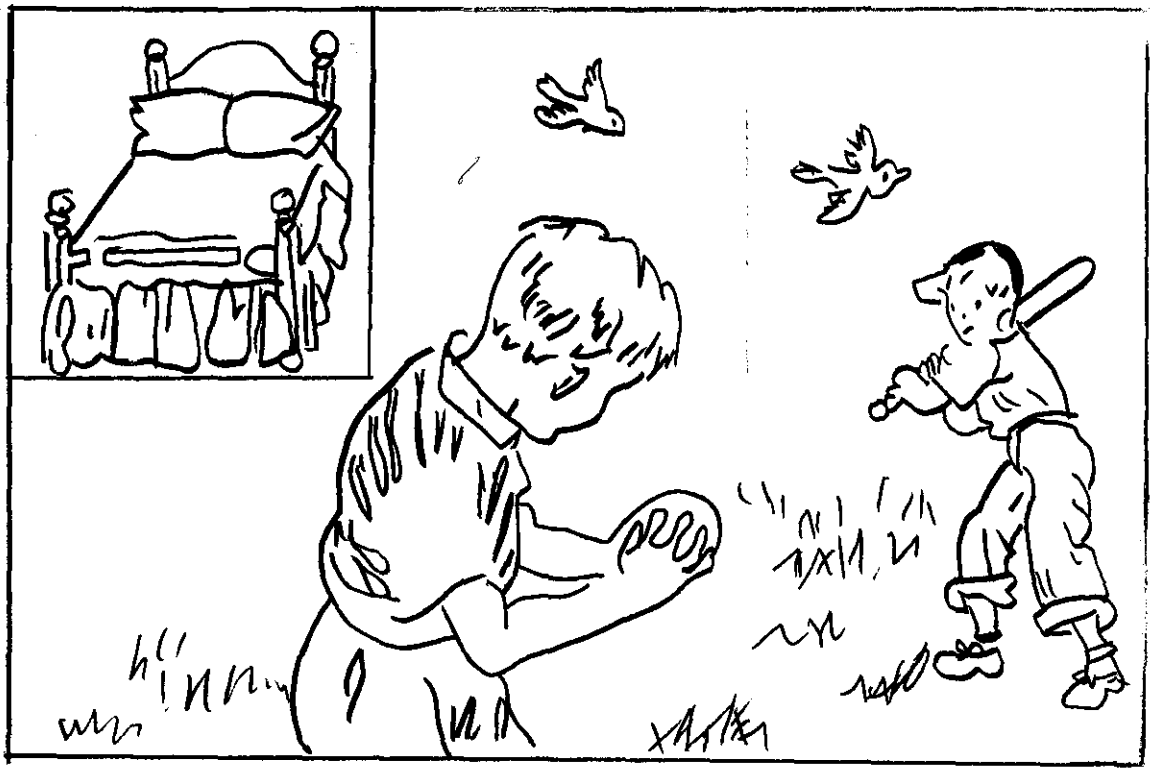

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FIGURE 3

AUDITORY DISCRIMINATION: INITIAL CONSONANTS

(This type of exercise appeared 62 times.)

[3] Phyllis Wilson, and Mabel O'Donnell, The New Over the Wall (White Plains, New York: Row, Peterson and Company, 1955), p. 28.

Directions: Discuss each picture in order. Have the pupils interpret the pictures so that they tell: What is happening, who the characters are, why they are doing what they are doing, what they are saying, what is going to happen next. Play "follow the leader" in retelling the story.

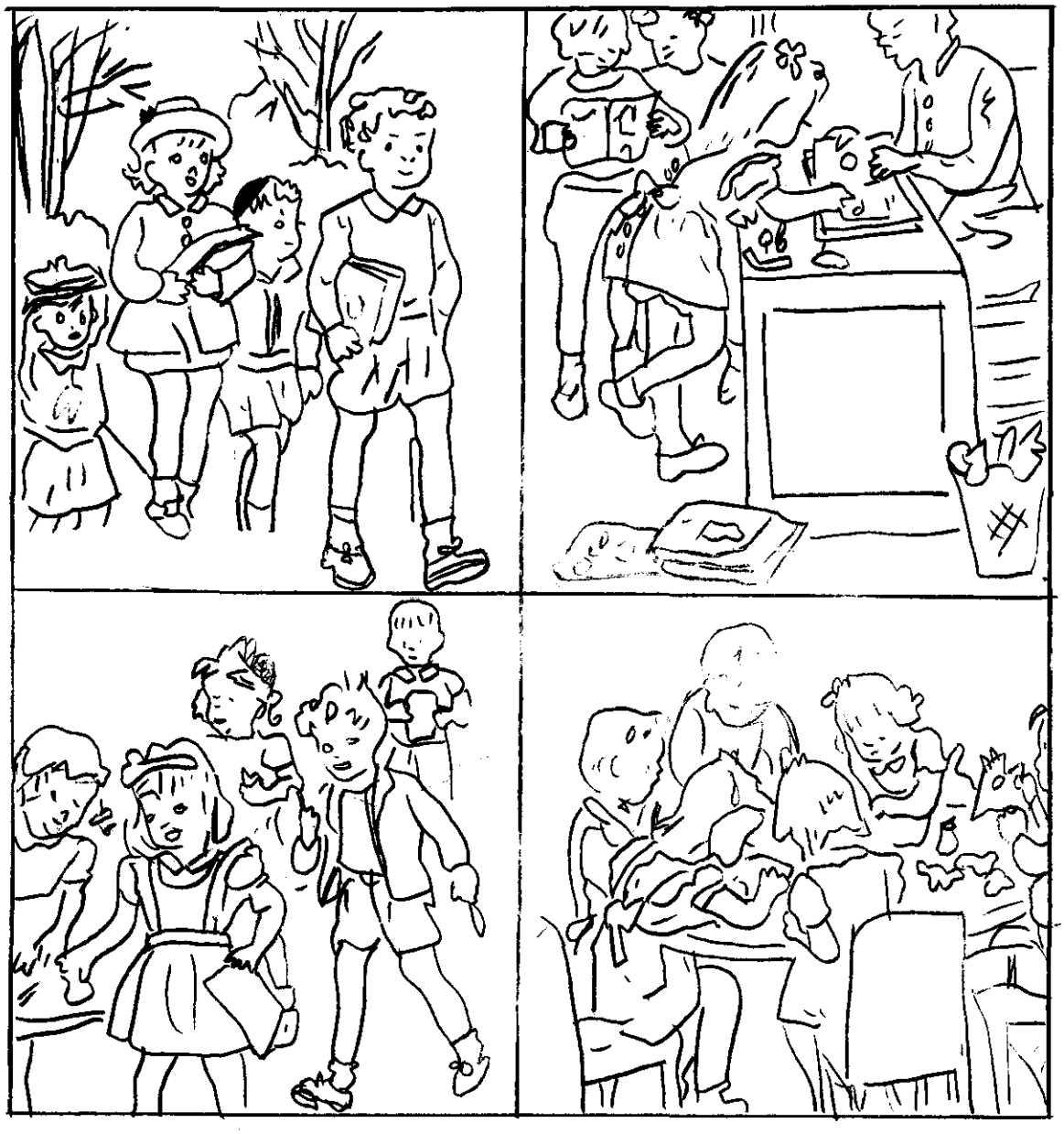

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FIGURE 4

LANGUAGE DEVELOPMENT: TELLING STORIES FROM PICTURES - PICTURE SEQUENCE AND DRAMATIZATION

(Telling stories from pictures appeared 120 times. Picture sequence appeared 85 times. Dramatization appeared 6 times.)

[4] Phyllis Wilson, and Mabel O'Donnell, The New Over the Wall (White Plains, New York: Row, Peterson and Company, 1955), p. 31.

Directions: (Interpreting the main idea; noting details and perceiving their relationship; making inferences; recognizing emotional reactions of story characters; anticipating outcomes; organizing ideas into language units; using narrative expression; enriching oral vocabulary. Before telling the picture-story pupils talk about the characters and action, and infer what may have happened before and what may happen next.

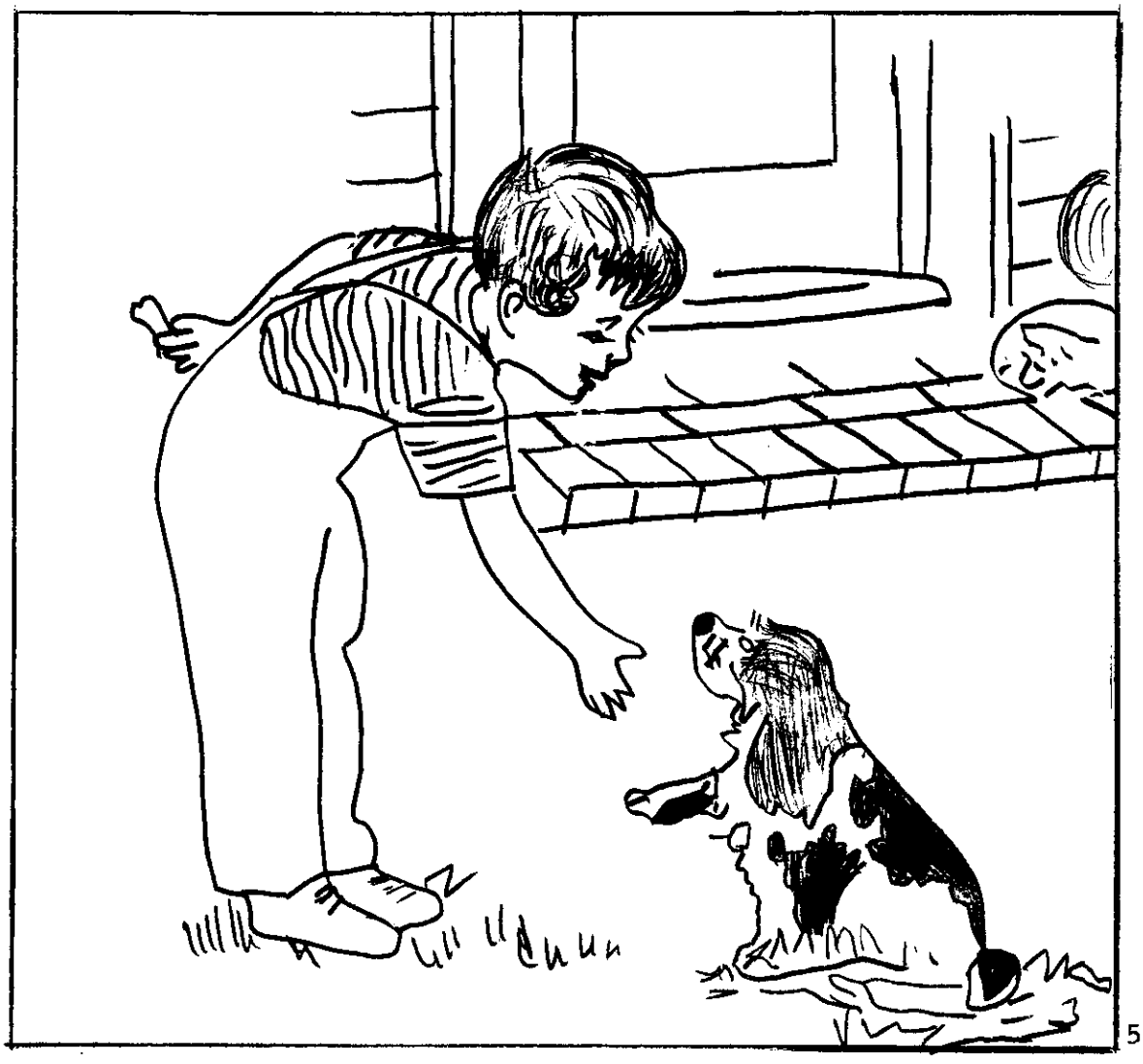

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FIGURE 5

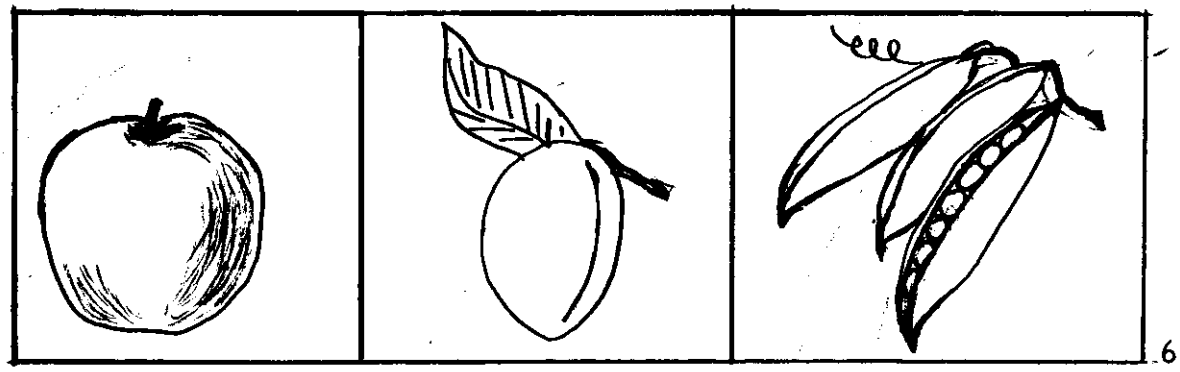
LANGUAGE DEVELOPMENT: 1. INTERPRETING ONE PICTURE AND 2. ANTICIPATION OF CONCLUSION FROM A PICTURE

(1. Interpreting one picture appeared 55 times.) (2. Anticipation of conclusion from a picture appeared 14 times.)

[5] William S. Gray, A. Sterl Artley, and Marion Monroe, We Read Pictures (New York: Scott, Foresman and Company, 1951, p. 1.

Directions: (Develop the concept of the phrase "belonging together," by a simple activity with objects or pictures.)

Name the three pictures in the row. Have the children put an X on the first picture (the apple). Find another picture in the row that is the same kind of thing as the apple and put an X on that. Have them explain that an apple and a pear are both fruits - the same kind of thing.



[6]

FIGURE 6

LANGUAGE: CLASSIFICATION OF OBJECTS

(This type of exercise appeared 87 times.)

[6]Grace B. Haynes, and David H. Russell, Games to Play (revised edition; Boston: Ginn and Company, 1957), p. 29.

Directions: Children may detach, color, fold into book form, and take home these pages. They should not be expected to read the numbers of the people and pets, but each should be identified.

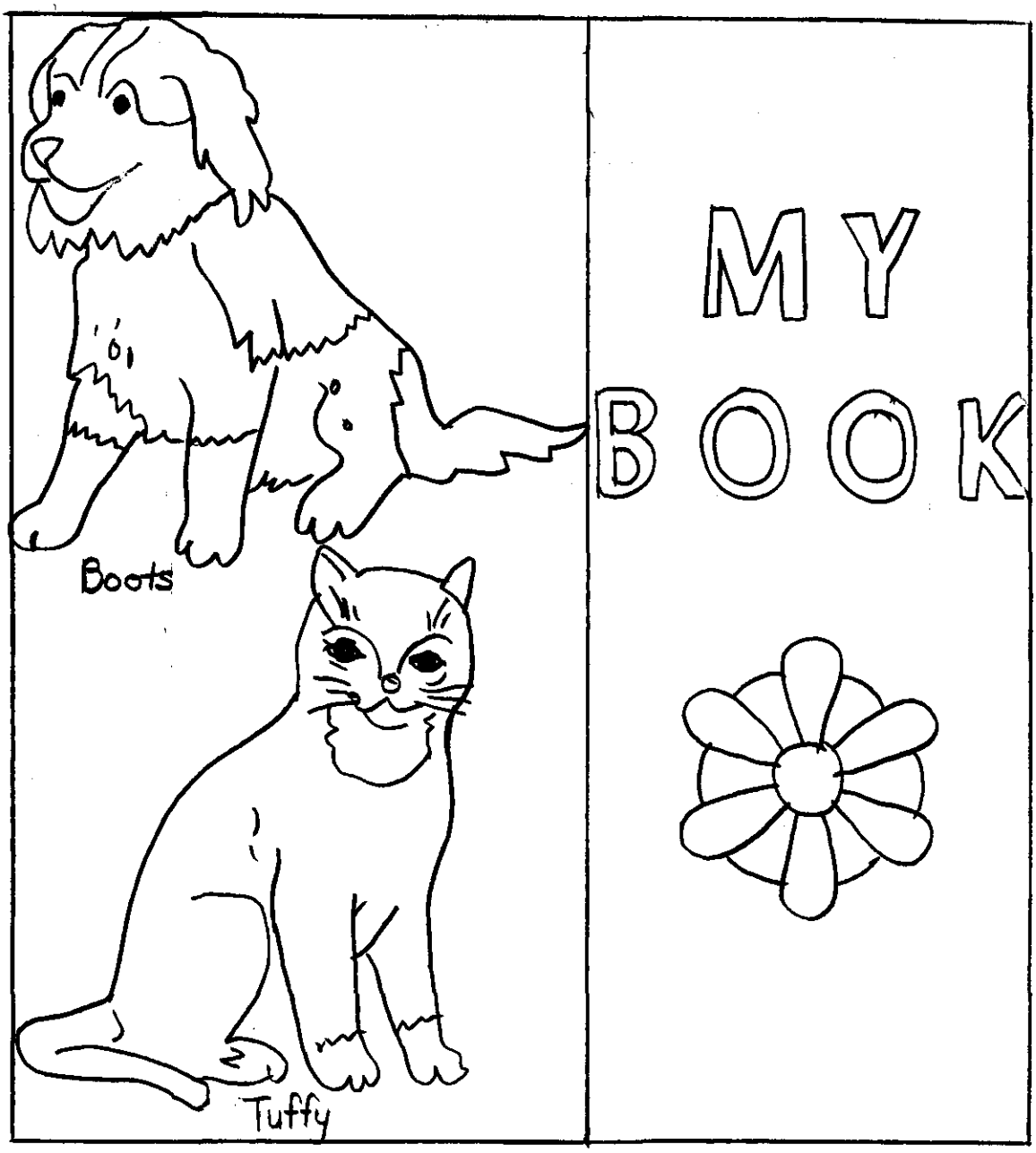


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FIGURE 7

MOTOR SKILLS: CUTTING AND FOLDING

(This type of exercise appeared 13 times.)

[7] Arthur I. Gates, and Josephine L. Wright, My Book (New York: The Macmillan Company, 1957), p. 4.

Directions: Recognizing similar shapes - configuration. Children cut out parts below black line, paste in proper places above, color, and take home.

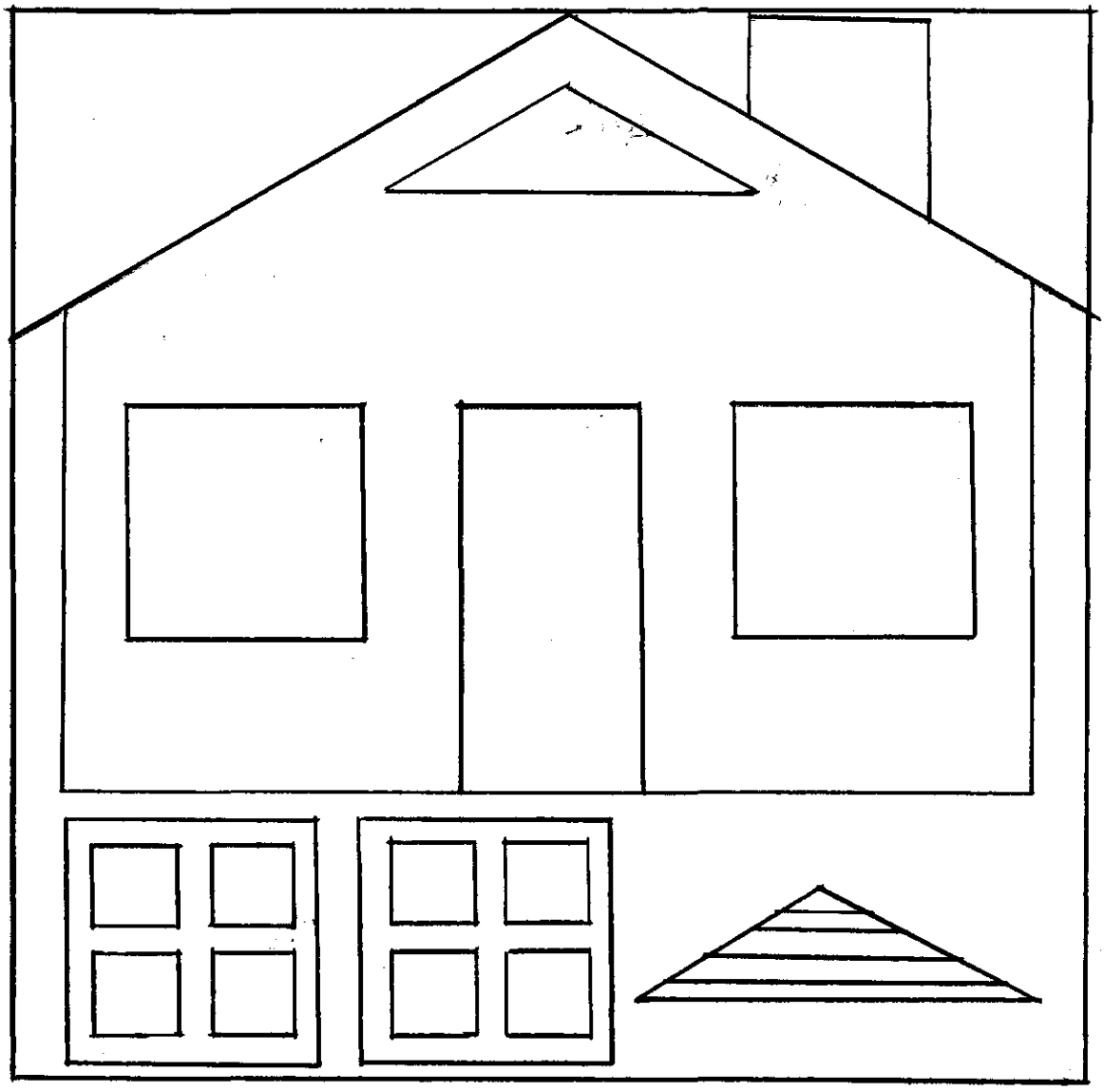

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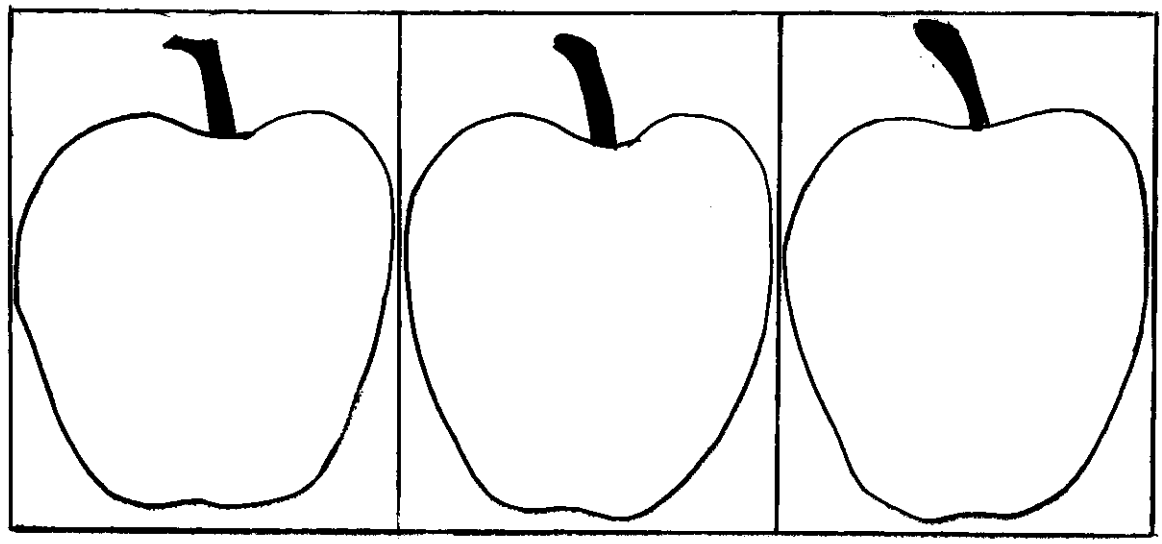
FIGURE 8

MOTOR: PASTING

(This type of exercise appeared 5 times.)

[8]Arthur I. Gates, and Josephine Wright, My Book (New York: The Macmillan Company, 1957), p. 55.

Directions: Ask, "What color is the first apple in the row?" Elicit red. "Color the other apple so that the two apples will look alike. Make the last apple in the row look like the other two apples."



9

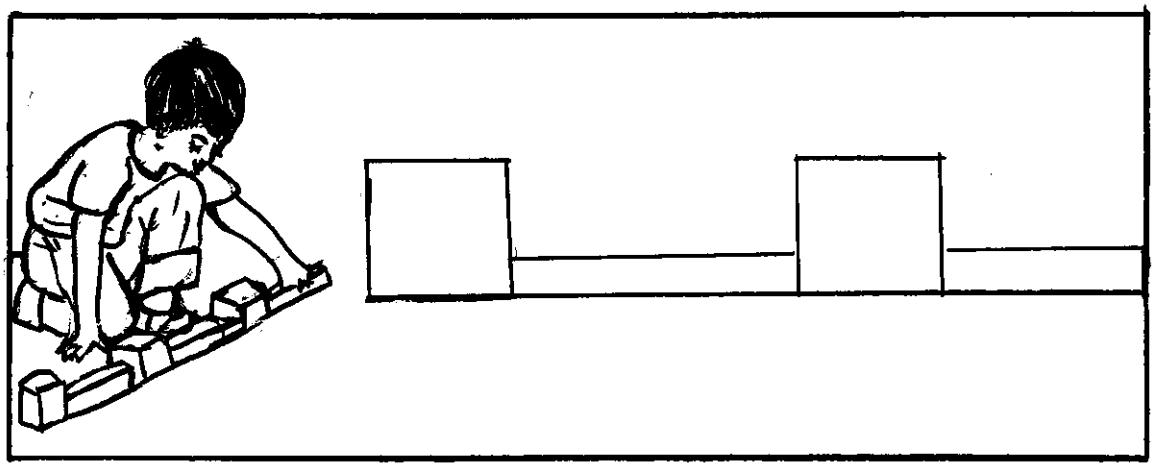
FIGURE 9

MOTOR SKILLS: COLORING

(This type of exercise appeared 34 times.)

[9] Odille Ousley, and David H. Russell, Fun with Tom and Betty (revised edition; Boston: Ginn and Company, 1957), p. 7.

Directions: Direct attention to the serial design. Next have the children start at the beginning of the design and trace with their index the same design Bill is making with his blocks. Then ask, "What block should Bill add next?" Elicit the square block, or let the children indicate in some other way the block that comes next in the serial pattern. Have the children trace with their fingers the series again and add with a crayon the figure that will complete the pattern.



10

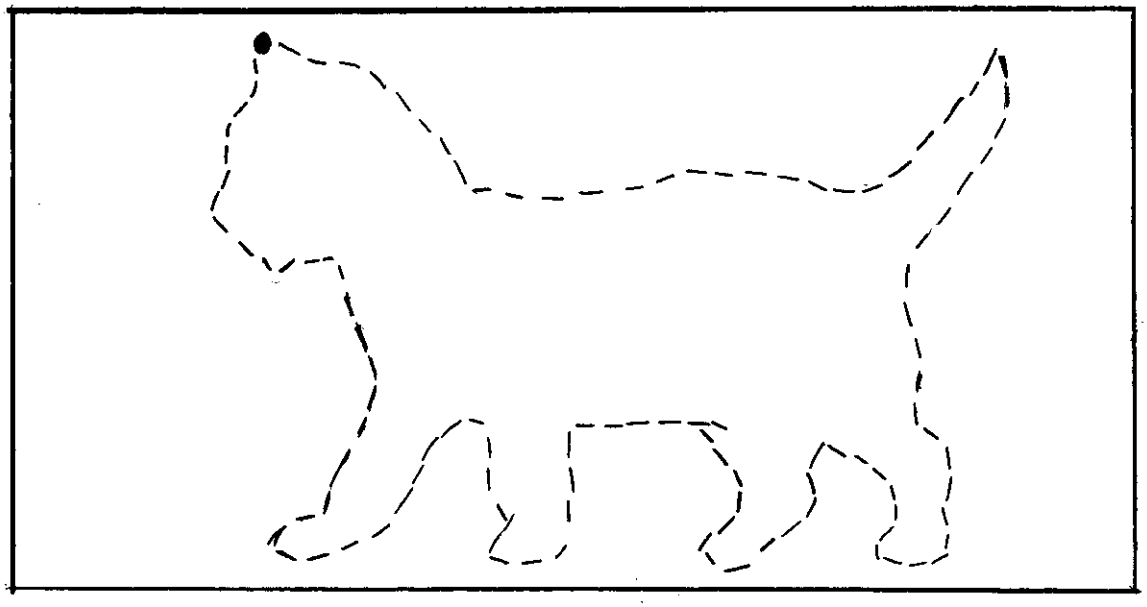
FIGURE 10

MOTOR SKILLS: REPRODUCING A PATTERN

(This type of exercise appeared 16 times.)

[10] William D. Sheldon, Queenie B. Mills, and Rosalie Mower, More Picture Stories (Boston: Allyn and Bacon, Inc., 1957), p. 43.

Directions: Have the pupils trace each drawing in the clockwise direction with their forefingers, starting with the dot.



11

FIGURE 11

MOTOR SKILLS: TRACING

(This type of exercise appeared 25 times.)

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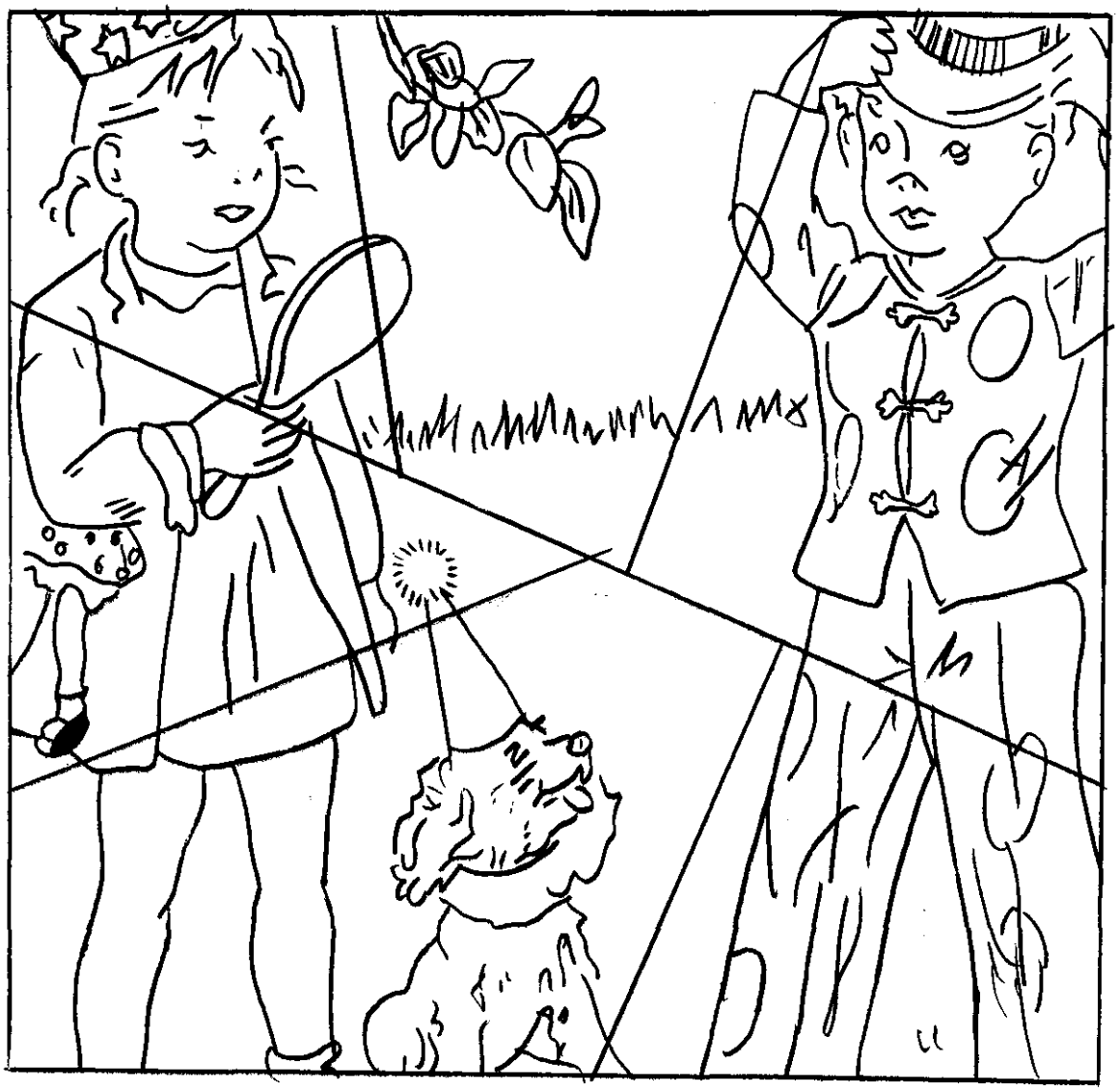
[11] William H. Burton, Clara Belle Baker, and Grace K. Kemp, Get Ready to Read (New York: The Bobbs-Merrill Company, Inc., 1950), p. 4.

Directions: Discuss the picture and decide what Alice and Jerry are planning to do. Color the picture, cut the sheet from the book, and cut out the large rectangle. Paste on light-weight cardboard and dry under weights. When the picture is dry, have pupils cut puzzle on lines indicated and practice putting it together. Make simple envelope to hold the pieces.



12

FIGURE 12

MOTOR SKILLS: PUTTING PUZZLE TOGETHER

(This type of exercise appeared 3 times.)

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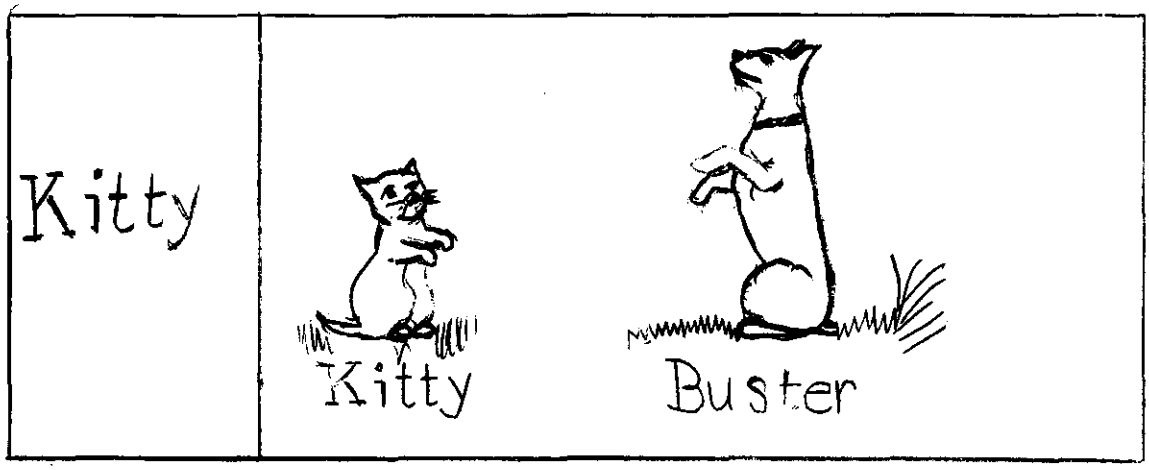
[12] Phyllis Wilson, and Mabel O'Donnell, The New Over the Wall (White Plains, New York: Row, Peterson and Company, 1955), p. 17.

Directions: Have the pupils read each name at the left and find it again at the right.



13

FIGURE 13

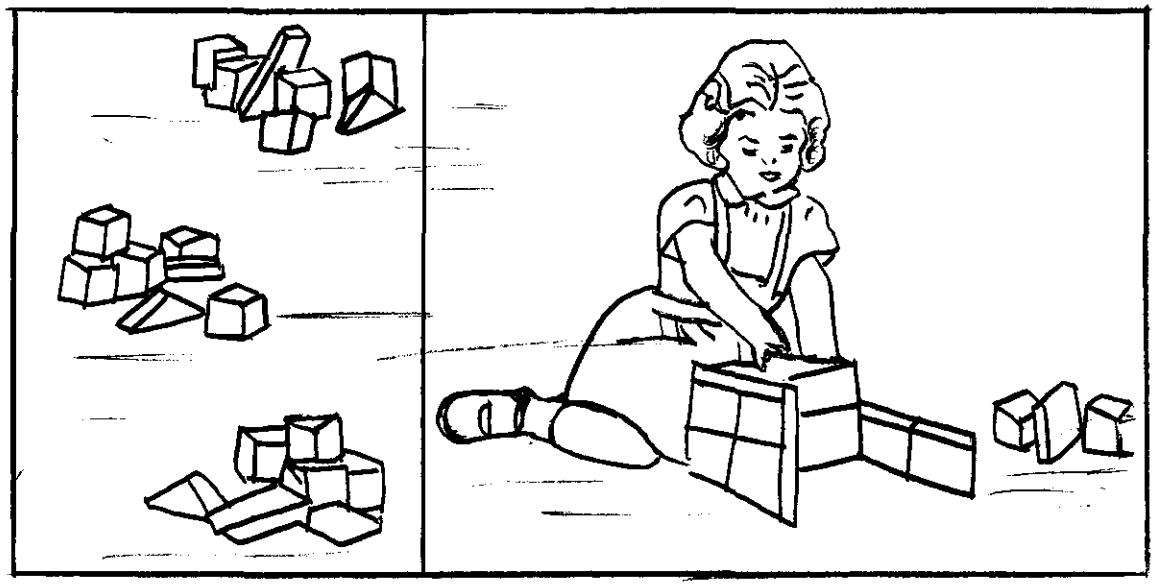
VISUAL DISCRIMINATION: MATCHING WORDS

(This type of exercise appeared 23 times.)

---

[13] William H. Burton, Clara Belle Baker, and Grace K. Kemp, Get Ready to Read (New York: The Bobbs-Merrill Company, Inc., 1950), p. 45.

Directions: Ask the pupils to pick out a pile of blocks at the left that matches the color of the blocks each child is using at the right.



14

FIGURE 14

VISUAL DISCRIMINATION: MATCHING COLORS

(This type of exercise appeared 10 times.)

---

[14] William H. Burton, Clara Belle Baker, and Grace K. Kemp, Get Ready to Read (New York: The Bobbs-Merrill Company, Inc., 1950), p. 10.

Directions: Ask the pupils to look at each block at the left and to find one at the right of the same size and shape.

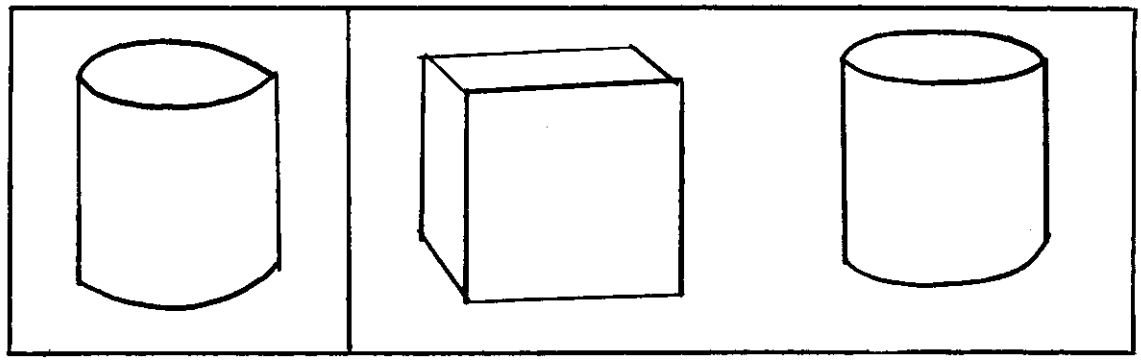


FIGURE 15

VISUAL DISCRIMINATION: MATCHING OBJECTS

(This type of exercise appeared 68 times.)

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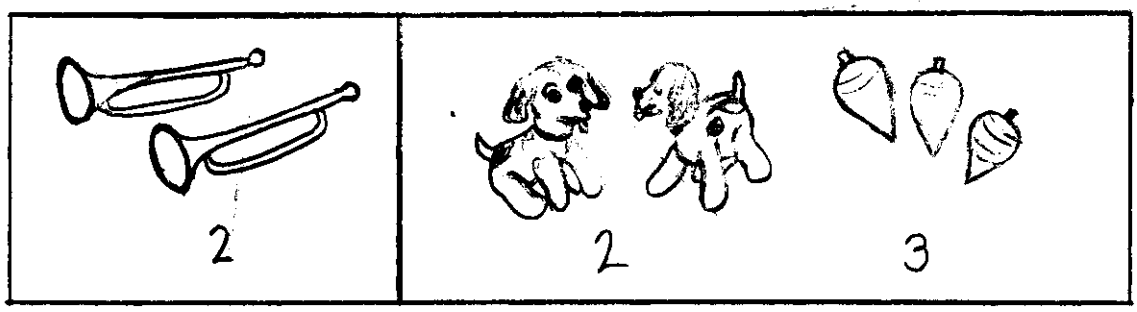
[15] William H. Burton, Clara Belle Baker, and Grace K. Kemp, Get Ready to Read (New York: The Bobbs-Merrill Company, Inc., 1950), p. 9.

Directions: Look at the first picture. How many toy are in this picture? What does the number under the picture say?

Now find another picture with two toys. Have you found it? Does the number under it say 2? Make a cross on the picture. Now make a cross on the number.



16

FIGURE 16

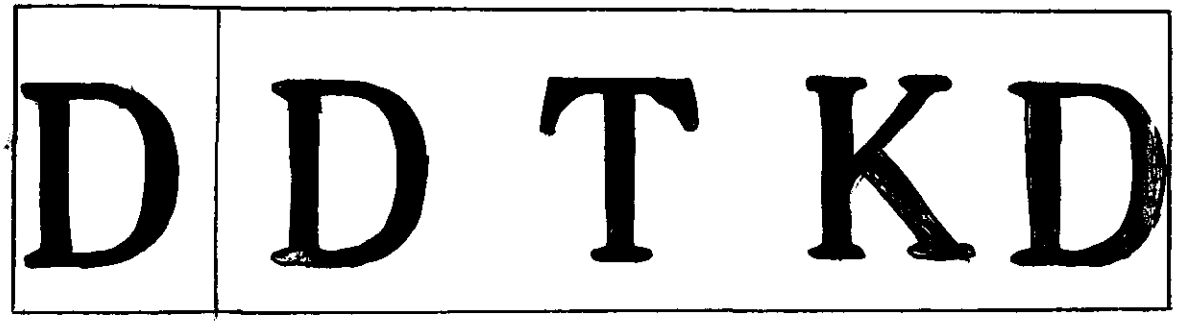
VISUAL DISCRIMINATION: MATCHING NUMBERS

(This type of exercise appeared 8 times.)

---

16 Wilson, Phyllis, and Mabel O'Donnell, The New Here We Go (White Plains, New York: Row, Peterson and Company, 1956), p. 45.

Directions: Encourage the pupils to talk about the picture. Then have them look at the letter at the left in each row and find two others like it at the right.



17

FIGURE 17

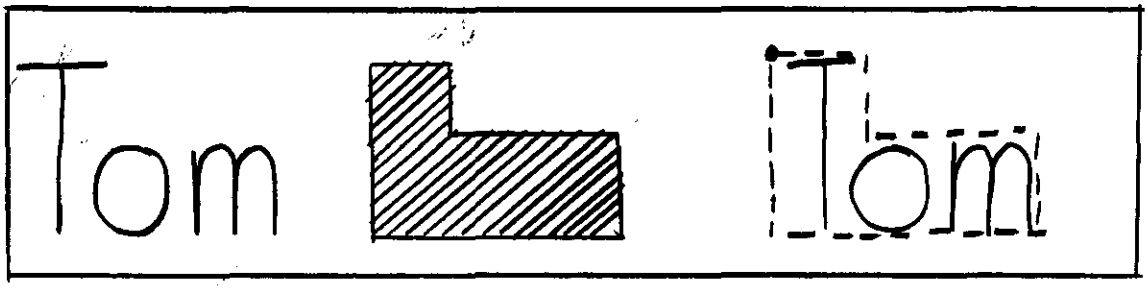
VISUAL DISCRIMINATION: MATCHING LETTERS

(This type of exercise appeared 11 times.)

---

17 William Burton, Clara Belle Baker, and Grace Kemp, Get Ready to Read (New York: The Bobbs-Merrill Company, Inc., 1950), p. 39.

Directions: Direct the children to trace the broken line around the word Tom by beginning at the small dot and following the dot to the right, first with their fingers, then with crayons or pencils. Call attantion to the differences in the forms of the completed word blocks.



[18]

FIGURE 18

VISUAL DISCRIMINATION: OUTLINE OF WORDS

(This type of exercise appeared 5 times.)

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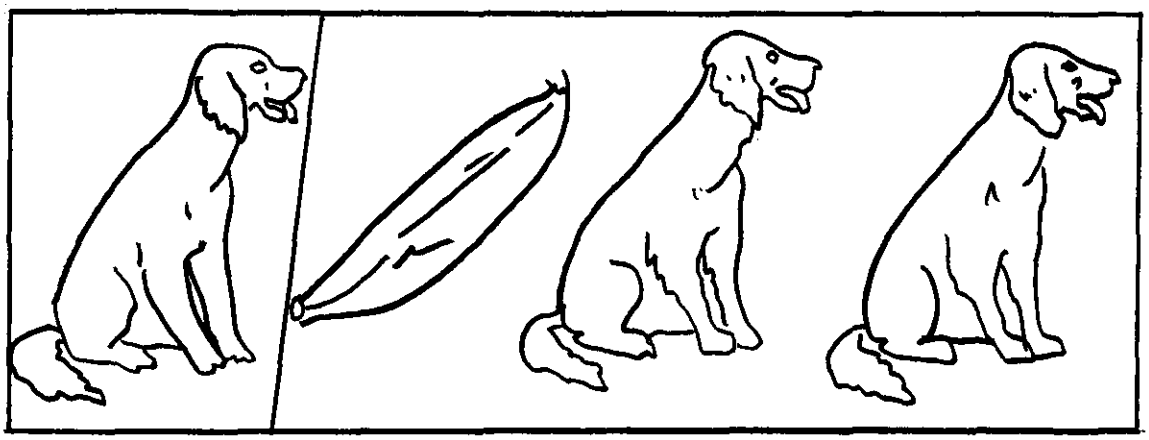
[18]Odille Ousely, and David H. Russell, Fun With Tom and Betty (revised edition; Boston: Ginn and Company, 1957), p. 52.

Directions: Direct the children to look at the row of three pictures, follow across the row with their fingers, find one that is different, and make an X on it.



19

FIGURE 19

VISUAL DISCRIMINATION: PICKING OUT UNLIKE OBJECTS

(This type of exercise appeared 80 times.)

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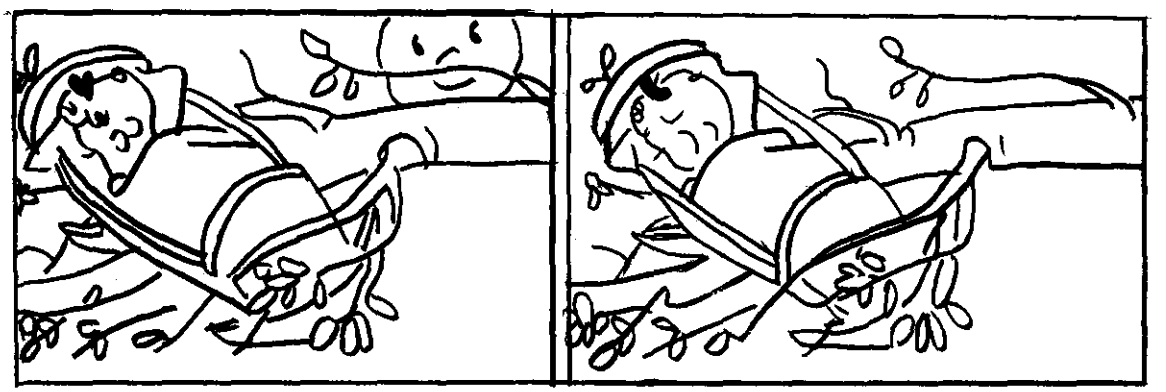
[19]Grace B. Haynes, and David H. Russell, Games to Play (revised edition; Boston: Ginn and Company, 1957), p. 51.

Directions: Have the pupils recall and repeat the Mother Goose Rhymes suggested by the pictures at the left. Have them compare each picture on the right with the corresponding picture on the left, find the missing part, and draw it in.



20

FIGURE 20

VISUAL DISCRIMINATION: WHAT IS MISSING FROM A PICTURE?

(This type of exercise appeared 13 times.)

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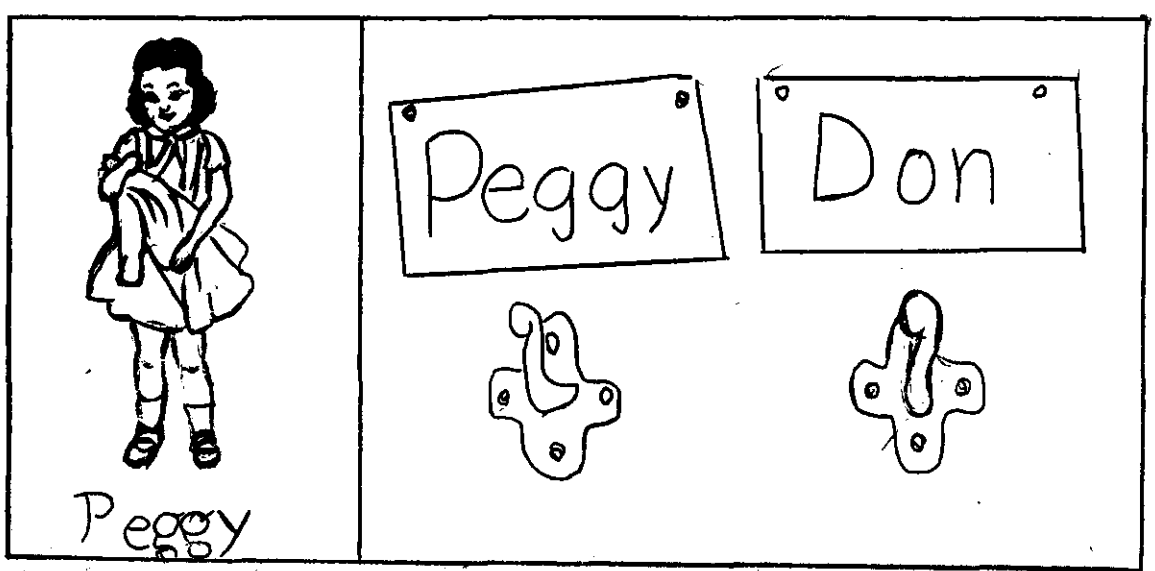
[20] Phyllis Wilson, and Mabel O'Donnell, The New Over the Wall (White Plains, New York: Row, Peterson and Company, 1955), p. 21

Directions: Help the pupils to associate the name of the child with the picture. Then have them look at the name at the left and find it again at the right.



21

FIGURE 21

WORD RECOGNITION: MATCHING PICTURES WITH WORDS

(This type of exercise appeared 21 times.)

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[21] William H. Burton, Clara Belle Baker, and Grace K. Kemp, Get Ready to Read (New York: The Bobbs-Merrill Company, Inc., 1950), p. 41.

Directions: Draw a green circle around all the words you can find like the first word in the row.

Run	Ran	Run	Run

[22]

FIGURE 22

VISUAL DISCRIMINATION: MATCHING WORDS

(This type of exercise appeared 19 times.)

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[22] Gertrude Hildreth, Allie Lou Felton, Alice Meighen, My First Schoolbook (Philadelphia: The John C. Winston Company, 1951), p. 47.

There were two mazes found in My Book by the Macmillan Company, 1955 but these are not shown due to size.

The children were to follow a specified route with finger or crayon. They were to be careful not to go outside the lines.

TABLE I

FREQUENCY OF SPECIFIC READING READINESS SKILLS
DEVELOPED IN SELECTED READINESS WORKBOOKS

SKILLS	PUBLISHERS									TOTAL
	A	B	C	D	E	F	G	H	I	
I. Auditory Discrimination										
A. Rhyming	2	3	4	21	2	4		5	3	44
B. Sounds (such as bells or tapping)		1	4	3						8
C. Initial Consonants	5		2	16	2	7	7	9	14	62
										+114
II. Language Development										
A. Telling stories from pictures		25	5	11	13	6	12	48		120
B. Picture Sequence	35		3	21	2	10			14	85
C. Interpreting one picture	9	4	4	12	1	5	8	12		55
D. Anticipation of conclusion from a picture	1	1	3		2		5	2		14
E. Dramatization						2	3	1		6
F. Classification of Objects	12	10	4	10	8		6	25	12	87
										+367
III. Motor Skills										
A. Cutting and Folding	4				9					13
B. Pasting					4	1				5
C. Coloring	1	2		2	5	19			5	34
D. Reproducing a Pattern	2		1		3	5		5		16
E. Tracing	3	3	1	6	3	4		5		25
F. Putting Puzzle Together	2					1				3
Maze					2					2
										+98

	A	B	C	D	E	F	G	H	I	
IV. Visual Discrimination										
A. Matching										
1. Words		4	3	4	1			1	10	23
2. Colors	1		2	2		1	31		1	10
3. Objects	9		3	22	9	7	4	6	8	68
4. Numbers		4				4				8
5. Letters		2	1	3					5	11
6. Outline of Words	3	1		1						5
B. Picking Out Unlike Objects	10	13	4	13	1	8	3	28		80
C. What is missing from a picture				2	1	4		5	1	13
										+218
V. Word Recognition										
A. Matching pictures with words		7	2	2		7	3			21
B. Development of a particular word		6		8			1			19
										+40

+ Total pages in each of the five large areas.

Key to Publishers

A. Allyn and Bacon, Inc., 1957
Picture Stories, Book I
More Picture Stories, Book II

B. American Book Co., 1958
Fun for All
Ready Go

C. The Bobbs-Merrill Co., Inc., 1950
Get Ready to Read

D. Ginn and Co., Revised edition
Fun with Tom and Betty, Revised edition
Games to Play, Revised edition

E. The Macmillan Co., 1955
My Book

F. Row, Peterson and Co., 1955
The New Over the Wall

G. Silver Burdett Co., 1945
Our First Book

H. Scott, Foresman and Co.,
We Read Pictures
We Read More Pictures
Before We Read

I. John C. Winston Co., 1951
My First Schoolbook

CHAPTER IV

PLAN OF STUDY

After analyzing the reading readiness workbooks, it was decided to test skills in the four areas which are included most often. These areas are auditory discrimination, language development, motor skills, and visual discrimination. Following the decision of the areas to be tested four groups were established, each to build a test.

In building the tests an attempt was made to have items similar in type to those in workbooks so that the first grade children to be tested would be familiar with the types of items, and to have items easy enough for all with a ceiling one step above the place included in the reading readiness workbooks.

Sections of some of the tests were tried out on a second grade child of high intelligence to gain some idea of the difficulty of the ceiling items.

The auditory, language, visual and part of the motor sections of the constructed tests are each in the form of a booklet since it was felt this would be easy for the children to handle while taking the tests and easy for the examiners to handle while correcting. On the parts of motor which entailed folding and cutting, separate sheets were used and the results were put into a separate envelope which had been given to each child previous to the administration of the motor skill test.

In addition to the four group tests administered to the children, the Boston University First Grade Success Study--January Test was also given. This test is comprised of two parts; a group test and an individual one. The group test is made up of identifying lower case letters shown, identifying words shown, identifying capitals named, identifying lower case letters named, hearing sounds in words, and writing letters dictated. The individual test consists of naming the 26 letters of the alphabet, both capital and lower case, giving the sounds of 24 letters and 16 consonant blends, applied phonics involving initial and final consonants and oral reading. The latter test is divided into three sections; pre-primer, primer and above primer, based upon the words of the Scott-Foresman Series.

Previous to the actual testing situation, the directions for each test were covered carefully so that there would be as much similarity as possible in the giving of directions for each test in each school.

It was decided to rotate the order of administering the tests from examiner to examiner. A person testing in Room A, for instance, might use the following order:

1. Language Development
2. Auditory Discrimination
3. Motor Skill
4. Visual Discrimination

In this case, a person testing in Room B would then use this order:

1. Visual Discrimination
2. Language Development
3. Auditory Discrimination
4. Motor Skill

The tests were administered within a four-day period, January 20-23, 1959 inclusive, by the group and trained examiners.

Description of Tests

Auditory

This test is comprised of three parts:

Ability to Hear Words Which Sound Alike at the Beginning
Ability to Hear Words Which Sound Alike at the End
Ability to Identify Sounds, Discriminate Between High and Low Sounds, Loud and Soft Sounds and Counting of Sounds

For testing the ability to discriminate between initial consonants and consonant blends pictures are arranged in rows of four each and the children put an X on those which sound alike at the beginning. The examiner names the pictures. Page 1 tests the ability to hear initial consonants. Row 2 has pictures of a feather, a fish, a candle and a fork. The examiner says, "Feather, fish, candle, fork." The children mark those which sound alike at the beginning. Part 2 tests the ability to hear initial consonant blends. Row 1 has pictures of a flag, a frog, a flower and a flashlight. The examiner says, "Flag, frog, flower, flashlight." The children mark those which sound alike at the beginning.

For testing the ability to discriminate between final sounds the same procedure was employed. Page 3 tests the ability to hear rhyming words with three pictures in each row. Row 1 has pictures of a hat, a bat, and a bell. The examiner says, "Hat, bat, bell." The children mark those which sound alike at the end. Page 4 tests the ability to hear similar final sounds when non-rhyming words are used. Each row has four pictures. Row 1 has pictures of a bed, a leaf, a bird, and a

pig. The examiner says, "Bed, leaf, bird, pig." The children mark those which sound alike at the end.

The third part of the auditory discrimination test is in the form of a phonograph record. The children have an answer sheet. The test and directions are included completely on the record. The first part is the identification of sounds. Example: The first sound heard is that of a dog barking. On the answer sheet for number 1 are three numbers: 1 2 3. If the child thinks he hears a dog barking he is to circle number 1, if he thinks he hears a seal barking he is to circle number 2 and if he thinks he hears a baboon he is to circle number 3.

The second part of the record tests the children's ability to discriminate between high and low sounds. Example: No. 1 is of one person singing and then another. On the answer sheet for this item are the numbers 1 2. The children are directed to circle number 1 if the first voice is higher, but circle number 2 if the first voice is lower.

The third part of the record tests the child's ability to count sounds. On each line of the answer sheet are three numbers, the child is directed to count the number of times he hears a certain sound and then circle the appropriate number. Example: The first sound is of a whistle blowing. The children are to count the number of times the whistle blows. On the answer sheet are the numbers 1 3 5. The child is to circle the appropriate number, in this case the 3.

The fourth part of the record tests the ability to distinguish between loud and soft sounds. Example: On each line of the answer sheet are the numbers 1 2. The sounds heard for number 1 are those of crickets chirping and frogs croaking. If the first sound they hear is louder they are to circle number 1, but if the first sound is the softer one they are to circle number 2.

The complete test with directions for administering and scoring may be found in the Appendix.

Language Development

This test is made up of three parts:

Classification
Picture Interpretation
Picture Sequence

Part one is built to test a child's ability to classify objects correctly. Each of the twelve rows consists of four pictures. The children mark with an X those objects which go together. Example: Row 1, page 1. Here there are pictures of a kite, a teddy bear, a cart and an apple. The children are directed to mark each that is a toy. The other items on page 1 are similar to this.

Page 2 increases in difficulty in that the children are to mark those things which go together. No further aid is given on this part of classification. Example: Row 7, page 2. Here there are pictures of a shoe, a sock, a dress and a mitten. As stated, the directions here are that the children mark those which go together.

Part two tests the child's ability to interpret a picture. On one side of a page is a full-page picture of a familiar activity; picture one depicts a scene at Jack's birthday party. People and objects are numbered so that the child may respond to questions by numbers in a space provided on the opposite page. The first part of the questioning involves looking at the picture, finding the answers to the questions and then recording the correct number. The second part consists of a child marking with an X the correct answer from a choice of three on the answer sheet. Example: Row 2, page 5. There are three pictures of Jack's face; one sad, one unsmiling and one happy. The child is directed to mark the one that shows how Jack will look when he sees his new bicycle. The last part is related to the main idea of the picture. Three titles are on the answer sheet and after the examiner carefully designates what each says, the children mark with an X that one which is the best name for the picture.

In this section of picture interpretation the above-mentioned general procedure is used with each of the three pictures included.

Part three tests the ability of the child to number pictures in a sequential order so that the pictures tell a story. The degree of difficulty was increased by increasing the number of pictures to be put in sequential order. The first two series have 4-picture sequences, the third a 5-picture sequence and the last a 7-picture sequence. These picture sequences involve pictures of experiences thought to be familiar to practically every first grade child.

The complete test with directions for administering and scoring may be found in the Appendix.

Motor Skills

This test is comprised of six parts:

Folding and cutting	Tracing
Cutting a Boat	Maze
Reproducing a Pattern	Coloring

Part one tests the children on their ability to fold evenly a piece of paper in four parts and cutting on one of the folds. The examiner demonstrates how to fold and where to cut the paper. The children draw a circle in each of the halves and they then cut out one of the circles.

Part two tests cutting which requires greater skill. The children cut out a picture of a two-masted boat with square sails drawn on a regular 8 1/2" by 11" paper.

Part three tests the ability to reproduce a pattern. Example: Sample A. has three circles drawn and the children are directed to finish this row of circles. The examiner illustrates this procedure on the board. Number 1 has three squares and the children continue this pattern to the edge of the page. The rest of the items are of other geometric figures, the intricacy of the figures becoming more difficult.

Part four consists of tracing over dotted lines to complete a picture. Example: Picture 1 is that of a balloon.

Part five is a maze. On a picture of a boy on his way to school, the child is to show the best way to get to school by drawing a line along a sidewalk. The line must be on a sidewalk.

Part six tests the ability to color pictures and stay within the boundaries of the lines. Example: Picture one is that of an apple with its stem and one leaf, picture two of a pear with its stem and one leaf, and picture three a jack-o-lantern with the eyes, nose and mouth cut out.

The complete test with directions for administering and scoring may be found in the Appendix.

Visual Discrimination

This test is made up of two parts:

Selecting That Object Which is Different in Each Line
Selecting Like Objects

Part one consists of 20 rows of 4 pictures each. The child selects and marks with an X the one which is different from the other three. These increase in difficulty. Example: Row 1, page 1. Pictures of three circles and one square. Row1, page 2. Pictures of similar fish with one going the opposite way. Row 1, page 3. Pictures of 4 similarly shaped tops with one having a different type of line as the only difference. Row 1, page 4. Pictures of four stamped envelopes, the only difference between them being that on one stamp no figure is drawn.

Part two is made up of selecting like items. The child marks with an X that picture which is the same as the first one in the row. In each case the child has four from which to choose. Page 5 consists of pictures of objects and geometric designs, page 6 of groups of geometric designs and 3-place numbers, page 7 of 4 and 5-place numbers plus words.

The complete test with directions for administering and scoring may be found in the Appendix.

Boston Univeristy First Grade Success Study--January Test

Test IA Identifying Lower Case Shown

The children circle from a group of five lower-case letters the one which is the same as the one exposed on a flashcard for a five

second period.

Test IB Identifying Words Shown

This part is similar to Test 1A only this time a word is flashed for a five-second period. The child circles that same word in a group of five words.

Test IIA Identifying Letters Named, Capitals

From a group of five capital letters, the child circles the one which the examiner says.

Test IIB Identifying Letters Named, Lower Case

From a group of five lower-case letters, the child circles the one which the examiner says.

Test III Hearing Sounds in Words

Part A.

From a group of five letters, the child circles that one which he hears at the beginning of a word said by the examiner.

Part B.

From a group of three words, the child circles that word which ends the same as the word said by the examiner. (6 items)

From a group of three words, the child circles that word which sounds the same at the beginning and end as a word said by the examiner. (12 items)

Part C.

From a group of six word parts, the child circles those which he hears in a word said by the examiner.

Test IV Letters Dictated

As letters are dictated by the examiner, the child writes the letter. Capital or lower case, cursive or manuscript letters are accepted.

Individual Test (part of the Boston University First Grade Success Study--January Test)

As each child is tested he reads from a copy which has been typed on a primary manuscript typewriter so that the size is that with which he is familiar. The examiner records the child's responses on a separate answer sheet for each child.

Part 1

This tests the child's ability to name the 26 letters, not in alphabetical order, first in capital form and then in lower-case form.

Part 2

This tests the child's ability to give the sounds of 24 letters and the sounds of 16 consonant blends.

Part 3

This part has two sections. The first consists of applied phonics with initial consonants and the second of applied phonics with final consonants.

READING ACHIEVEMENT

This is an oral reading test in which the examiner reads some and the child follows. The test measures word recognition. Vocab-

ulary is based on the Scott-Foresman Series; pre-primer, primer and above primer levels. The first section contains seventy-three words of which fifty-eight are from the three pre-primers, three are new words and twelve are repeated. The second section contains fifty-nine words of which fourteen are repeated, twenty-one words are from the primer, twenty are primer related and four are based on context clues. The last section contains thirty words, five of which are repeated, five are from the first reader, one is a primer word not tested before, and nineteen words are above primer.

The reliability of the test is .97 as determined by the Kuder-Richardson formula.

If a child hesitates on a word over 5 seconds the examiner tells the word and indicates this on the answer sheet by drawing a line through that word. If a child does reasonably well on story one, he goes on to story two. If he continues to do well he goes on to story three.

The complete test with directions for administering and scoring may be found in the Appendix.

Reliability of the Constructed Tests

The reliability coefficients determined by the Pearson Product-Moment Method and Corrected with the Spearman-Brown Formula were as follows:

Auditory Discrimination Test	.899
Language Development Test	.930
Motor Skills Test	.719
Visual Discrimination	.814

SCORING

In scoring the auditory, language, and visual tests, incorrect items are those items which are marked that should not be, or those which should have been marked and are not. The number of incorrect items is subtracted from the total possible scores to obtain the test score.

Auditory

Part one, the ability to identify words which sound alike at the beginning, includes items for both initial consonants and consonant blends. The total possible score is thirty-two.

Part two, the ability to identify like final sounds in words, includes rhyming words and final consonants. The total possible score is thirty-one.

The phonograph record which measures the ability to identify familiar sounds, likenesses and differences in pitch and intensity,

and counting sounds hears has a possible score of twenty-five.

The total possible score for the auditory test is sixty-three.

Language

Part one, classification of objects, consists of forty-eight possible correct responses.

Part two, picture interpretation, has thirty-six and part three, picture sequence, has twenty.

The total possible score for the language test is one hundred four.

Visual

Part one, picking out unlike objects, has a possible score of twenty. Part two, matching pictures, numbers, and words, has a possible score of twenty-five.

The total possible score for the visual test is forty-five.

Motor

The first five parts of this test are quality of coloring, cutting out a boat, folding, cutting on a straight line and cutting a circle. The possible scores are three, five, three, three, and three, respectively. These items have been scored according to a quality scale, which is presented in Table II. Various criteria have been established in order to assign numerical scores to the varying degree of quality of these items, thus partial credit can be earned. The reliability of scores has been established by two people independently scoring one hundred randomly selected tests. The coefficient of correlation is .92.

The remaining three parts, reproducing a pattern, tracing, and coloring have possible total scores of fifteen, fifteen, and six respectively. The number of correct items is subtracted from the total possible score to obtain the scores for these parts.

The total possible score for the motor test is fifty-three.

Boston University Tests

The pattern for scoring, which has been previously established, can be found in the Appendix.

POPULATION

This study is based upon three hundred eleven first grade children in sixteen classes. This is the total first grade population in a residential community in the greater Boston area. The range of intelligence quotients is sixty-six to one hundred forty-nine with a mean I. Q. of 106.27. The population is slightly above a normal one.

Table I shows the quality scale used in correcting the first five parts of the motor test.

TABLE II

QUALITY SCALE FOR MOTOR TEST

A. Quality of coloring - Scoring is from 1 to 3 points.

1 point-Coloring extends greatly beyond the lines drawn.

2 points-Coloring extends somewhat beyond lines drawn.

3 points-Coloring is neat and within boundaries.

B. Cutting out boat - Scoring is from 1 to 5 points.

1 point - The boat is incomplete.

2 points-The cutting deviates greatly from the drawn line, the sails often being cut off.

3 points-The cutting deviates somewhat from the drawn line, the sails often being cut off.

4 points-The cutting deviates from the drawn line only slightly.

5 points-The cutting follows the drawn line perfectly.

C. Cutting on a straight line-Scoring is from 1 to 3 points.

1 point-The cutting is irregular and jagged.

2 points-The cutting deviates from the fold slightly.

3 points-The line cut follows the fold perfectly.

D. Cutting on a circle-Scoring is from 1 to 3 points.

1 point-The cutting does not follow the circle drawn.

2 points-The cutting deviates from the drawn line slightly.

3 points-The cutting follows the circle drawn.

E. Folding-Scoring is from 1 to 3 points.

1 point-The fold is crooked and the corners do not meet.

2 points-The edges are slightly irregular.

3 points-The edges meet.

CHAPTER V

ANALYSIS OF DATA

The data were analyzed to discover:

1. the relationship of reading achievement to measures constructed in:
   - A. auditory discrimination (word sounds)
   - B. auditory discrimination (recognition of familiar sounds)
   - C. language development
   - D. motor
   - E. visual
2. the relationship of reading achievement to measures of knowledge of letter names, hearing sounds in words, and identifying words shown.
3. the relationship of reading achievement of chronological age and intelligence.
4. the relationship of tests constructed with previous tests measuring similar functions.

The means and standard deviations were computed for all tests and sub-tests. Correlations with reading achievement were computed for tests which showed a normal distribution.

The Pearson product-moment coefficient of correlation was used. This is defined by Greene, Jorgensen, and Gerberich as follows:

> The Pearson product-moment coefficient of correlation, indicated by r, is a single numerical index that expresses the extent to which the pairs of corresponding measures of two variables tend to deviate similarly from their respective arithmetic means. (Italics in the original) The values of r may vary all the way from + 1.00, indicating perfect positive relationship, through all of the possible decimals to zero (0.00), indicating no relationship whatever, to - 1.00, indicating a perfect negative relationship. . . .[1]

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[1] Harry A. Greene, Albert N. Jorgensen, and J. Raymond Gerberich, Measurement and Evaluation in the Secondary School (New York: Longmans, Green and Company, 1954), p. 372.

Table III shows the relationships of the total scores on the tests constructed with reading achievement.

TABLE III

RELATIONSHIP OF READING ACHIEVEMENT TO TESTS CONSTRUCTED

Factor	r	S.E.r
Auditory (Word Sounds)	.469	.044
Visual	.450	.045
Language	.380	.040
Auditory (Phonograph Record)	.360	.050
Motor	.165	.055

All the correlations were positive and ranged from a high of .469 for auditory (word sounds) to a low of .165 for motor.

Frequency distributions are included for all the tests to show that the abilities of the group are measured adequately. A low correlation would not then be the result of a skewed distribution.

Table IV shows the distribution, mean and standard deviation of scores on the reading test.

TABLE IV

READING SCORES

Score	Frequency
153-157	1
148-152	1
143-147	2
138-142	1
133-137	3
128-132	3
123-127	8
118-122	6
113-117	8
108-112	7
103-107	12
98-102	11
93-97	4
88-92	13
83-87	8
78-82	9
73-77	11
68-72	12
63-67	15
58-62	10
53-57	23
48-52	13
43-47	18
38-42	23
33-37	20
28-32	19
23-27	15
18-22	7
13-17	12
8-12	3
3-7	7
0-2	6
Mean 61.74	S.D. 35.19

The scores ranged from 0 to 153 with a mean of 61.74 and a standard deviation of 35.19.

Table V shows the distribution, mean and standard deviation of auditory scores (sounds in words).

TABLE V

AUDITORY SCORES (SOUNDS IN WORDS)

Score	Frequency
59-61	39
56-58	52
53-55	41
50-52	47
47-49	37
44-46	35
41-43	16
38-40	16
35-37	11
32-34	7
29-31	1
26-28	1
23-25	3
20-22	4
17-19	0
14-16	1
Mean 49.48	S. D. 8.46

The scores ranged from 16 to 60, with a mean of 49.48 and a standard deviation of 8.46.

Table VI shows the distribution, mean and standard deviation of scores on the test of beginning consonants.

TABLE VI

BEGINNING CONSONANTS

Score	Frequency
16	116
15	43
14	29
13	27
12	48
11	12
10	13
9	7
8	8
7	2
6	3
5	0
4	1
3	0
2	0
1	1
0	1
Mean 13.40	S.D. 2.68

The scores ranged from 0 to 16, with a mean of 13.40 and a standard deviation of 2.68.

Table VII shows the distribution, mean and standard deviation of scores on the tests of final consonants and blends.

TABLE VII

FINAL CONSONANTS		BLENDS	
Score	Frequency	Score	Frequency
16	41	16	4
15	40	15	9
14	43	14	24
13	39	13	137
12	41	12	29
11	27	11	27
10	26	10	23
9	14	9	23
8	18	8	9
7	5	7	14
6	9	6	5
5	1	5	2
4	6	4	2
3	0	3	3
2	1		
Mean 12.23	S.D. 2.97	Mean 11.66	S.D. 2.23

In the test of final consonants the scores ranged from 2 to 16, with a mean of 12.23 and a standard deviation of 2.97. In the test of blends the scores ran from 3 to 16., with a mean of 11.66 and a standard deviation of 2.23.

Table VIII shows the distribution, mean and standard deviation of scores on the test of rhymes and Table IX shows the distribution, mean and standard deviation of scores on the test of familiar sounds.

TABLE VIII

RHYMES

Score	Frequency
15	61
14	47
13	51
12	34
11	43
10	23
9	16
8	11
7	11
6	6
5	4
4	1
3	1
2	1
1	0
0	1
Mean 11.96	S.D. 2.90

TABLE IX

PHONOGRAPH RECORD

Score	Frequency
25	1
24	5
23	15
22	19
21	29
20	32
19	40
18	38
17	39
16	29
15	18
14	11
13	5
12	10
11	8
10	3
9	3
8	2
7	3
6	0
5	0
4	0
3	1
Mean 16.79	S.D. 6.77

On the test of rhymes the scores ranged from 0-15 with a mean of 11.96 and a S.D. of 2.90.

On the test of familiar sounds the scores ranged from 3 to 25 with a mean of 16.79 and a standard deviation of 6.77.

Table X shows the distribution, mean and standard deviation of the scores on the total visual discrimination test.

TABLE X

VISUAL DISCRIMINATION

Score	Frequency
45	1
44	5
43	10
42	19
41	21
40	18
39	28
38	20
37	39
36	24
35	24
34	22
33	14
32	17
31	14
30	5
29	5
28	3
27	8
26	4
25	3
24	5
23	6
22	1
21	1
20	0
19	2
18	1
17	0
16	0
15	0
14	0
13	0
12	0
11	0
10	0
9	0
8	0
7	1
Mean 35.41	S. D. 5.40

The scores ranged from 7 to 45 with a mean of 35.41 and a standard deviation of 5.40.

Table XI shows the distribution, mean and standard deviation of scores on part one, visual discrimination, selecting the unlike object.

TABLE XI

VISUAL DISCRIMINATION PART ONE

Score	Frequency
20	5
19	23
18	49
17	55
16	62
15	41
14	38
13	19
12	13
11	6
10	2
9	2
8	0
7	0
6	0
5	0
4	1
Mean 16.09	S.D. .97

The scores ranged from 4 to 20, with a mean of 16.09 and a standard deviation of .97.

Table XII shows the distribution, mean and standard deviation of scores on visual discrimination test part two, matching pictures, numbers and words

TABLE XII

VISUAL DISCRIMINATION PART TWO

Matching Pictures		Matching Numbers		Matching Words	
Score	Frequency	Score	Frequency	Score	Frequency
11	27	6	146	8	204
10	40	5	84	7	54
9	46	4	35	6	29
8	51	3	18	5	9
7	39	2	11	4	6
6	35	1	9	3	2
5	31	0	8	2	3
4	27			1	3
3	10			0	1
2	4				
1	1				
Mean 7.40	S.D. 2.31	Mean 4.89	S.D. 1.49	Mean 7.29	S.D. 1.35

The scores on matching pictures ranged from 1 to 11 with a mean of 7.40 and a standard deviation of 2.31. The scores on matching numbers ranged from 0 to 6, with a mean of 4.89 and a standard deviation of 1.49. The scores on matching words ranged from 0 to 8 with a mean of 7.29 and a standard deviation of 1.35.

Table XIII shows the distribution, mean and standard deviation of scores on the total language test.

TABLE XIII

TOTAL LANGUAGE

Score	Frequency
95-97	1
92-94	9
89-91	11
86-88	21
83-85	19
80-82	23
77-79	33
74-76	27
71-73	32
68-70	30
65-67	24
62-64	22
59-61	17
56-58	10
53-55	9
50-52	7
47-49	6
44-46	2
41-43	3
38-40	2
35-37	0
32-34	0
29-31	1

Mean 71.54 S.D. 12.64

The scores ranged from 1 to 97 with a mean of 71.54 and a standard deviation of 12.64.

Table XIV shows the distribution, mean and standard deviation of scores on the classification section of the language test.

TABLE XIV

LANGUAGE CLASSIFICATION

Score	Frequency
47-49	16
44-46	56
41-43	106
38-40	73
35-37	34
32-34	9
29-31	6
26-28	1
23-25	1
20-22	3
17-19	4
14-16	0
11-13	0
8-10	1
5-7	0
2-4	0
0-1	1
Mean 40.14	S.D. 12.72

The scores ranged from 0 to 48 with a mean of 40.14 and a standard deviation of 12.72.

Table XV shows the distribution, mean and standard deviation of the picture interpretation section of the language test.

TABLE XV

DISTRIBUTION OF SCORES ON THE LANGUAGE INTERPRETATION TEST

Score	Frequency
32-34	4
29-31	34
26-28	70
23-25	76
20-22	53
17-19	39
14-16	17
11-13	10
8-10	2
5-7	3
2-4	1
0-1	2
Mean 22.82	S. D. 5.50

The scores ranged from 0 to 33 with a mean of 22.82 and a standard deviation of 5.50.

Table XVI shows the distribution, mean and standard deviation of scores on the sequence section of the language test.

TABLE XVI

LANGUAGE SEQUENCE

Score	Frequency
20	10
19	1
18	5
17	6
16	9
15	11
14	18
13	22
12	25
11	16
10	12
9	15
8	18
7	20
6	22
5	16
4	16
3	23
2	20
1	17
0	9
Mean 8.60	S. D. 5.08

The scores ranged from 0 to 20 with a mean of 8.60 and a standard deviation of 5.08.

Table XVII shows the distribution, mean and standard deviation of scores on the total motor skills test.

Table XVIII shows the distribution, mean and standard deviation of scores on the test of reproducing a pattern.

TABLE XVII

TOTAL MOTOR

Score	Frequency
50-52	11
47-49	17
44-46	19
41-43	33
38-40	31
35-37	39
32-34	43
29-31	41
26-28	31
23-25	24
20-22	8
17-19	10
14-16	2
11-13	1
Mean 34.90	S. D. 8.20

TABLE XVIII

REPRODUCING A PATTERN

Score	Frequency
15	72
14	0
13	2
12	2
11	12
10	128
9	7
8	3
7	5
6	62
5	3
4	5
3	5
2	2
1	1
0	1
Mean 9.94	S. D. 3.50

The scores on the total motor skill test ranged from 12 to 51 with a mean of 34.90 and a standard deviation of 8.20.

The scores on the test of reproducing a pattern ranged from 0 to 15 with a mean of 9.94 and a standard deviation of 3.50.

Table XIX shows the distribution, mean and standard deviation of scores on the test of folding.

TABLE XIX

FOLDING

Score	Frequency
3	83
2	112
1	94
0	22
Mean 1.82	S. D. .89

The scores on the folding test ranged from 0 to 3 with a mean of 1.82 and a standard deviation of .89.

Table XX shows the distribution, mean and standard deviation of scores on the test of tracing.

TABLE XX

TRACING

Score	Frequency
15	72
14	1
13	0
12	4
11	12
10	58
9	8
8	11
7	5
6	45
5	50
4	3
3	15
2	3
1	3
0	21
Mean 8.47	S. D. 4.59

The scores on the tracing test ranged from 0 to 15 with a mean of 8.47 and a standard deviation of 4.59.

Table XXI shows the distribution, mean and standard deviation of scores on the test of straight cutting.

Table XXII shows the distribution, mean and standard deviation of scores on the test of cutting a circle.

TABLE XXI

STRAIGHT CUT

Score	Frequency
3	87
2	146
1	78
Mean 2.03	S.D. .73

TABLE XXII

CUTTING A CIRCLE

Score	Frequency
3	121
2	136
1	52
0	2
Mean 2.21	S.D. .73

On the test of straight cutting the scores ranged from 1 to 3 with a mean of 2.03 and a standard deviation of .73.

On the test of cutting a circle the scores ranged from 0 to 3 with a mean of 2.21 and a standard deviation of .73.

Table XXIII shows the distribution, mean and standard deviation of scores on the test of cutting a boat.

TABLE XXIII

CUTTING A BOAT

Score	Frequency
5	55
4	75
3	89
2	42
1	40
0	10
Mean 3.11	S.D. 1.37

The scores on the test of cutting a boat ranged from 0 to 5 with a mean of 3.11 and a standard deviation of 1.37.

Table XXIV shows the distribution, mean and standard deviation of scores on the coloring test.

TABLE XXIV

COLORING

Score	Frequency
6	300
5	2
4	0
3	3
2	0
1	4
0	2
Mean 5.86	S.D. .89

The scores on the coloring test ranged from 0 to 6, with a mean of 5.86 and a standard deviation of .89.

Table XXV shows the distribution, mean and standard deviation of the scores on the quality of coloring.

TABLE XXV

QUALITY OF COLORING

Score	Frequency
3	79
2	119
1	110
0	3
Mean 1.88	S.D. .80

The scores on the quality of coloring ranged from 0 to 6, with a mean of 1.88 and a standard deviation of .80.

Table XXVI shows the relationship of tests concerning letter names with reading achievement.

TABLE XXVI

RELATIONSHIP OF READING ACHIEVEMENT TO KNOWLEDGE OF LETTERS

Factor	r	S. E. r
Indiv. B. U. Test, II (Sounds of letters and Blends)	.630	.022
B. U. Test III (Hearing Sounds in Words)	.607	.020
B. U. Test 1B (Identifying Words Shown)	.552	.018

The correlations ranged from a high of .630 for sounds in the individual test to a low of .552 for identifying words shown.

Table XXVII shows the distribution, mean and standard deviation of Boston University Individual Test II, Sounds of Letters and Blends.

TABLE XXVII

SOUNDS OF LETTERS AND BLENDS

Score	Frequency
38-40	19
35-37	20
32-34	23
29-31	15
26-28	16
23-25	27
20-22	41
17-19	34
14-16	28
11-13	29
8-10	12
5-7	16
2-4	11
0-1	20
Mean 20.05	S. D. 10.82

In the test of sounds of letters and blends the scores ranged from 0 to 40 with a mean of 20.05 and a standard deviation of 10.82.

Table XXVIII shows the distribution, mean and standard deviation of Boston University Test III, Hearing Sounds in Words, for the 311 children tested.

TABLE XXVIII

HEARING SOUNDS IN WORDS

Score	Frequency
62-64	4
59-61	4
56-58	5
53-55	26
50-52	26
47-49	43
44-46	22
41-43	30
38-40	33
35-37	30
32-34	20
29-31	19
26-28	18
23-25	12
20-22	7
17-19	5
14-16	2
11-13	1
8-10	2
5-7	2
Mean 39.95	S.D. 11.23

In the test of hearing sounds in words the scores ranged from 5 to 62 with a mean of 39.95 and a standard deviation of 11.23.

Table XXIX shows the distribution mean and standard deviation of Boston University Test IB, Identifying Words Shown.

TABLE XXIX

IDENTIFYING WORDS SHOWN

Score	Frequency
31	3
30	2
29	2
28	2
27	10
26	7
25	13
24	19
23	16
22	15
21	33
20	32
19	22
18	25
17	21
16	20
15	17
14	13
13	13
12	7
11	5
10	6
9	4
8	1
7	2
6	0
5	0
4	0
3	0
2	1
Mean 19.10	S.D. 4.78

In the test of identifying words shown the scores ranged from 2 to 31 with a mean of 19.10 and a standard deviation of 4.78.

Table XXX shows the distribution, mean and standard deviation of Boston University Test II A, Identifying Capital Letters Named and the distribution, mean and standard deviation of Boston University Test II B, Identifying Lower Case Letters Named

TABLE XXX

IDENTIFYING CAPITAL LETTERS NAMED		IDENTIFYING LOWER CASE LETTERS NAMED	
Score	Frequency	Score	Frequency
26	159	26	48
25	50	25	59
24	35	24	49
23	14	23	31
22	9	22	27
21	4	21	22
20	4	20	12
19	8	19	9
18	3	18	11
17	9	17	7
16	3	16	12
15	1	15	5
14	0	14	4
13	2	13	4
12	2	12	4
11	2	11	1
10	1	10	1
9	0	9	1
8	2	8	1
7	0	7	2
6	1	6	1
5	0		
4	0		
3	0		
2	0		
1	1		
0	1		
Mean 23.90	S.D. 3.24	Mean 22.04	S.D. 4.42

In the test of identifying capital letters named the scores ranged from 0 to 26 with a mean of 23.9 and a standard deviation of 3.24. In the test of identifying lower case letters named the scored ranged from 6 to 26 with a mean of 22.04 and a standard deviation of 4.42.

Table XXXI shows the distribution mean and standard deviation of Boston University Test IV, Writing Letters Dictated.

TABLE XXXI

WRITING LETTERS DICTATED

Score	Frequency
26	49
25	49
24	37
23	27
22	15
21	13
20	18
19	19
18	15
17	7
16	8
15	6
14	4
13	8
12	3
11	4
10	1
9	3
8	3
7	3
6	3
5	1
4	3
3	3
2	3
1	2
0	4
Mean 20.30	S.D. 6.33

In the test of writing letters dictated the scores ranged from 0 to 26 with a mean of 20.30 and a standard deviation of 6.33.

Table XXXII shows the distribution, mean and standard deviation of Boston University Individual Test I, Naming Capital Letters and the distribution, mean and standard deviation of Boston University Individual Test I, Naming Lower Case Letters.

TABLE XXXII

NAMING CAPITAL LETTERS		NAMING LOWER CASE LETTERS	
Score	Frequency	Score	Frequency
26	87	26	37
25	47	25	52
24	40	24	40
23	17	23	30
22	19	22	34
21	15	21	16
20	7	20	9
19	9	19	14
18	2	18	7
17	7	17	7
16	11	16	5
15	4	15	5
14	10	14	6
13	5	13	6
12	2	12	4
11	6	11	4
10	5	10	6
9	0	9	6
8	4	8	4
7	3	7	2
6	1	6	2
5	1	5	1
4	3	4	3
3	2	3	1
2	1	2	5
1	2	1	3
0	1	0	2
Mean 21.40	S.D. 5.94	Mean 20.26	S.D. 6.34

In the test of naming capital letters the scores ranged from 0 to 26 with a mean of 21.40 and a standard deviation of 5.94. In the test of naming lower case letters the scores ranged from 0 to 26 with a mean of 20.26 and a standard deviation of 6.34.

Table XXXIII shows the distribution, mean and standard deviation of Boston University Individual Test III, Applied Phonics.

TABLE XXXIII

APPLIED PHONICS

Score	Frequency
25	3
24	3
23	7
22	11
21	8
20	10
19	7
18	8
17	6
16	12
15	12
14	8
13	8
12	11
11	11
10	10
9	6
8	6
7	9
6	9
5	11
4	11
3	9
2	20
1	22
0	73
Mean 8.50	S.D. 7.78

In the test of applied phonics the scores ranged from 0 to 25 with a mean of 8.50 and a standard deviation of 7.78.

Table XXXIV shows the relationship of reading achievement with chronological age and intelligence.

TABLE XXXIV

RELATIONSHIP OF READING ACHIEVEMENT TO CHRONOLOGICAL AGE AND INTELLIGENCE

Factor	r	S. E. r
I. Q.	.454	.046
C. A.	.041	.000093

The correlation of reading achievement with intelligence was .454. The correlation of reading achievement with chronological age was .041.

Table XXXVI shows the distribution, mean and standard deviation of the chronological age.

TABLE XXXVI

CHRONOLOGICAL AGE

Age in Months	Frequency
94	1
93	0
92	2
91	2
90	0
89	1
88	2
87	2
86	3
85	2
84	2
83	6
82	22
81	23
80	33
79	30
78	26
77	23
76	25
75	25
74	24
73	22
72	18
71	15
70	1
69	1
Mean 77.57	S.D. 3.18

In the distribution of chronological age, the ages in months ranged from 69 to 94 with a mean of 77.57 and a standard deviation of 3.18.

Table XXXV shows the distribution, mean and standard deviation of the Otis Quick Scoring Mental Ability Test.

TABLE XXXV
INTELLIGENCE

Score	Frequency
148-152	2
143-147	7
138-142	11
133-137	20
128-132	19
123-127	15
118-122	25
113-117	32
108-112	38
103-107	50
98-102	22
93-97	24
88-92	20
83-87	5
78-82	6
73-77	5
68-72	0
63-67	1
Mean 106.27	S.D. 16.45

In the intelligence test the scores ranged from 66 to 149 with a mean of 106.27 and a standard deviation of 16.45.

Table XXXVII shows the relationships of tests constructed with previous tests measuring similar functions.

TABLE XXXVII

RELATIONSHIP OF TESTS CONSTRUCTED TO OTHER TESTS

Factor	r	S. E. r
Auditory (Word Sounds) B. U. Test III (Hearing Sounds in Words)	.511	.041
Auditory (Phonograph Record) B. U. Test III - (Hearing Sounds in Words)	.072	.056

The correlation of the total auditory scores with those on the B. U. Test III (Hearing sounds in words) was .511. The correlation of the test of familiar sounds with B. U. Test III (hearing sounds in words) was .072.

CHAPTER VI

SUMMARY AND CONCLUSIONS

The purposes of this study were:

1. to measure the various abilities presented in the readiness workbooks of basal reading series and to relate the findings to reading achievement of grade one in January.

2. to measure the knowledge of letter names and sounds and relate the findings to reading achievement of grade one in January.

The workbooks of nine systems were carefully analyzed to discover types and frequency of suggested exercises. Four general areas were in evidence; auditory discrimination, language development, motor skills, and visual discrimination. Group tests were constructed to include exercises comparable to the published ones with ceilings in all areas beyond the workbook material. The reliability coefficients of these tests were .899, .930, .719 and .814 for auditory discrimination, language, motor skills, and visual discrimination respectively.

These tests and the Boston University First Grade Success Study--January Test were administered in January to 311 children in 16 classrooms in a community in Greater Boston. All of the testing was completed in one school week. Intelligence was measured by the Otis Quick Scoring Mental Ability Test which had been administered in October.

The frequency distributions for all the tests showed that the abilities of the group were measured adequately. Low correlations were not affected by a skewed distribution.

The following conclusions may be drawn:

1. Reading achievement in January in grade one appears to be more closely related to knowledge of letter names and sounds than to abilities taught in the readiness workbooks of basal series.
   a. The correlations of reading achievement and the various tests of letter knowledge and sounds were .552, .607, and .630 for identifying words shown, hearing sounds in words, and an individual test of initial consonants and blends respectively.
   b. The correlations of reading achievement and types of exercises in the workbooks were .165, .360, .380, .450, and .469 for motor skills, recognition of familiar sounds, language, visual discrimination (pictures and forms), and auditory discrimination (sounds in words) respectively.
2. The different types of auditory tests showed different relationships with reading achievement.
   a. The correlations were .360, .469, and .607, for recognition of familiar sounds, recognition of like sounds in letters and words through pictures, and the Boston University Test of hearing sounds in words respectively.

b. The auditory test (sounds in words) based on the workbook materials showed a positive relationship to the Boston University Hearing Sounds in Words Test. The correlation was .511. The auditory (familiar sounds) correlated with the same test .071.

3. Chronological age does not seem to be an important factor in first grade success. The correlation of reading achievement and chronological age was .040.
4. Intelligence is one factor in first grade reading achievement. The correlation of intelligence and reading was .454. Individual phonics, hearing sounds in words and matching words shown had higher correlations, .630, .607, and .552, respectively.

APPENDIX

AUDITORY

Directions for initial sounds

Say:

Now we're going to listen and look carefully at the pictures and find the ones that sound alike at the beginning. We're going to mark some, not all, of the pictures. In some lines we may mark only one, sometimes we may mark all. Listen carefully as I tell you the name of every picture.

Put your marker under the first row. You are going to mark only those that sound alike at the beginning. Listen: TENT, BALL, POT, TURTLE. (Remember, mark just the ones that sound alike at the beginning. Put a big X on the picture.

Move your markers. Listen: FEATHER, FISH, CANDLE, FORK.
Move your markers. Listen: HAND, HAMMER, HORN, HORSE.
Move your markers. Listen: MITTEN, MOON, NAIL, MOUSE.

Now turn the page and put your marker under the first row. Remember, mark just those pictures that sound alike at the beginning of the word.

Listen: FLAG, FROG, FLOWER, FLASHLIGHT.
Move your marker. Listen: PLANT, PLANE, PLUM, PLATE.
Move your marker. Listen: BREAD, BLOCK, BRUSH, BROOM.
Move your marker. Listen: STRAWBERRY, STRING, STAMP, STREET.

Directions for final sounds

Say:

Now we're going to listen for words that sound alike at the end. We'll mark only those that sound alike at the end of the word.

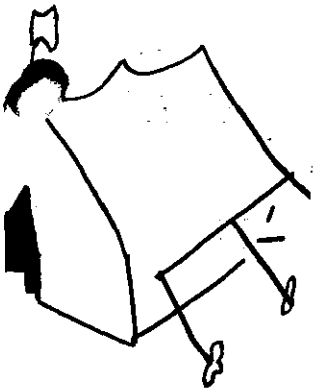
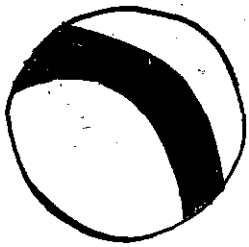
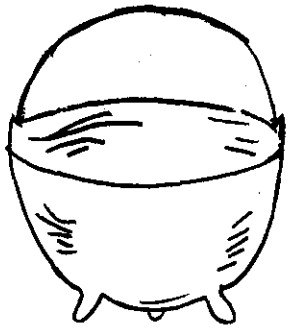
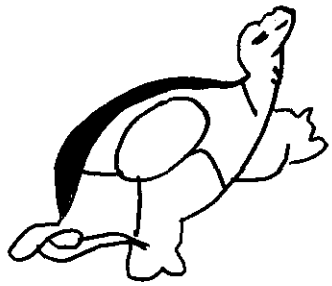
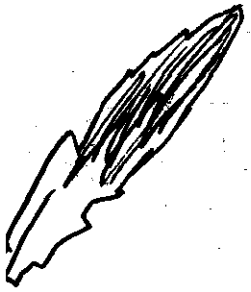
Put your marker under the first row. Listen: HAT, BAT, BELL. Remember, mark only the ones that sound alike at the end of the word.

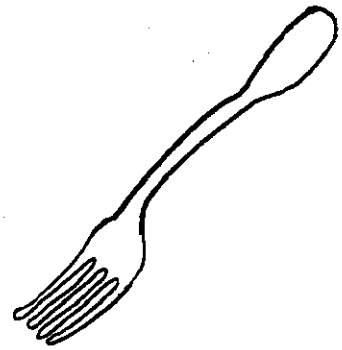
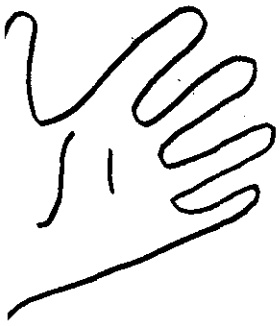
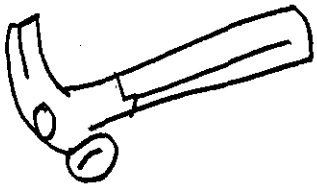
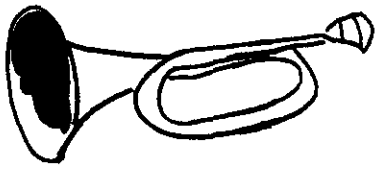
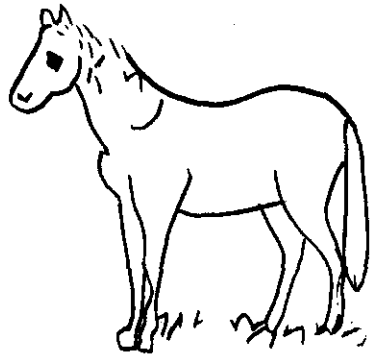
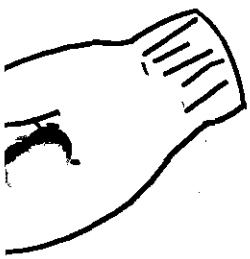
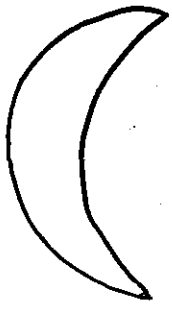
Move your marker. Listen: CAKE, CAGE, RAKE.
Move your marker. Listen: PAN, KNIFE, FAN.
Move your marker. Listen: SOCK, LOCK, TOP.
Move your marker. Listen: BEAR, JAR, PEAR.

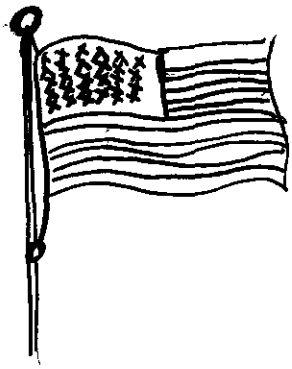
Now everybody turn the page and put your marker under the first row. Remember to mark only those pictures that sound alike at the end. BED, LEAF, BIRD, PIG.

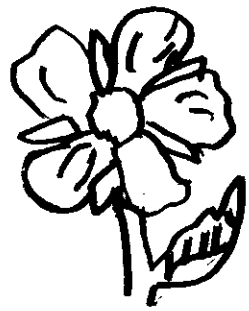
Move your marker. Listen: LION, DRUM, WAGON, BARN.
Move your marker. Listen: GOAT, BOAT, COAT, RABBIT.
Move your marker. Listen: TRACK, CLOCK, DUCK, CORN.

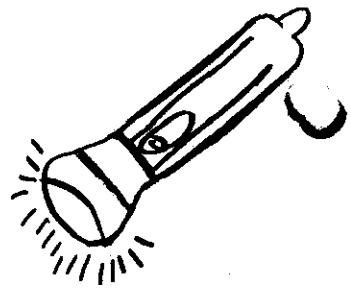
Name _____

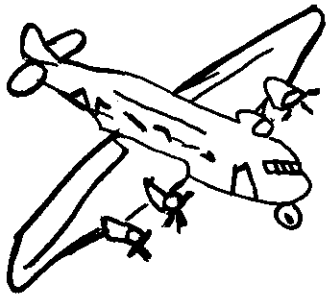






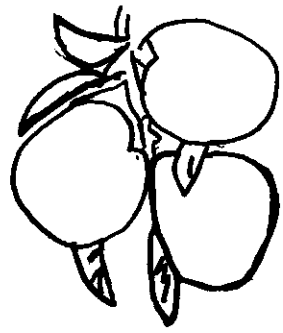









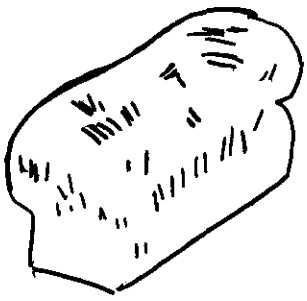


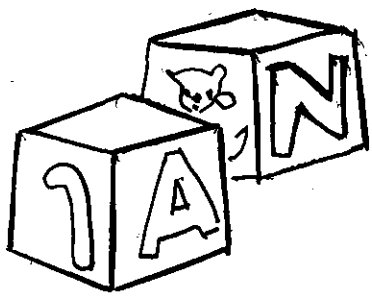








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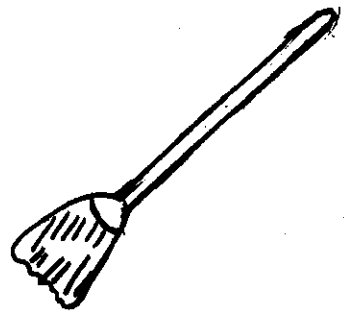

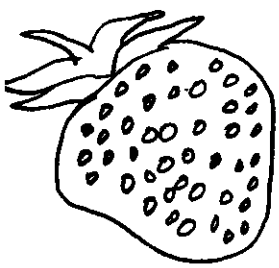

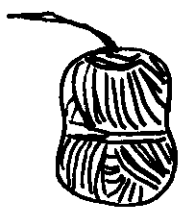


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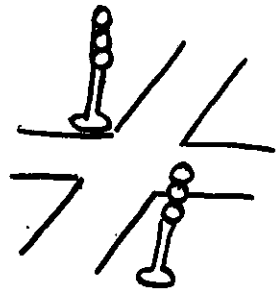
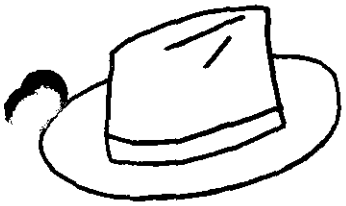
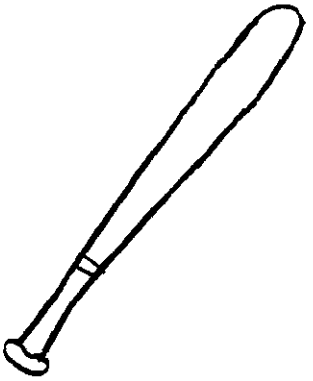
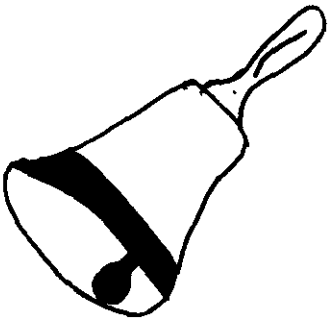
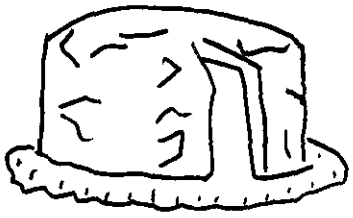
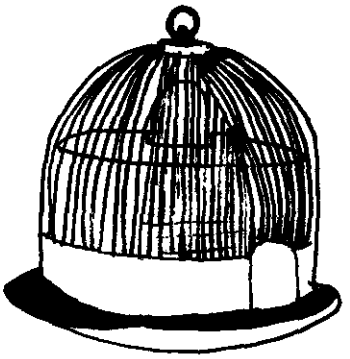


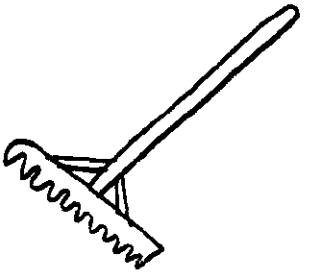


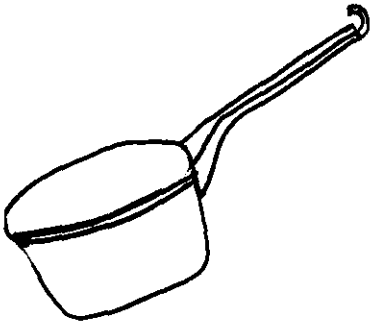


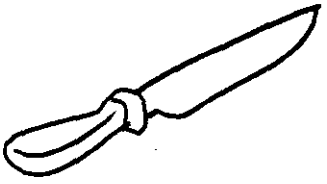


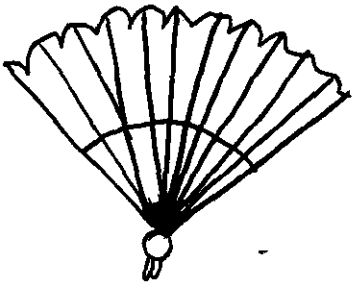


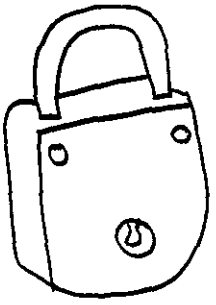


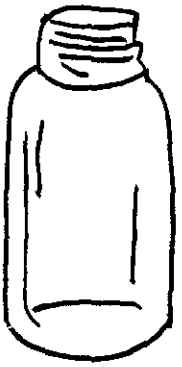


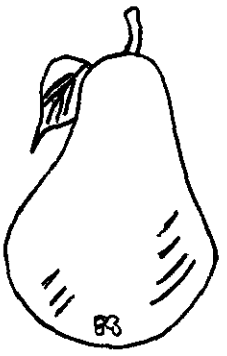


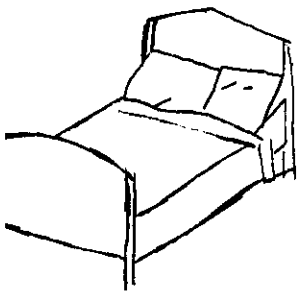
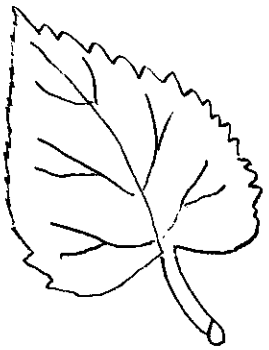
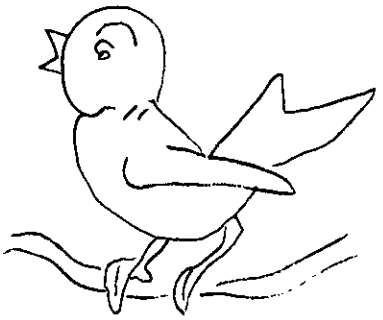
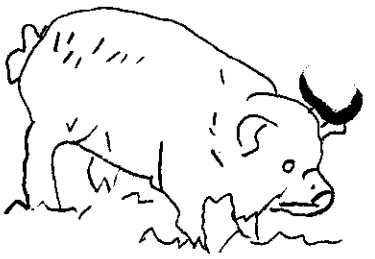
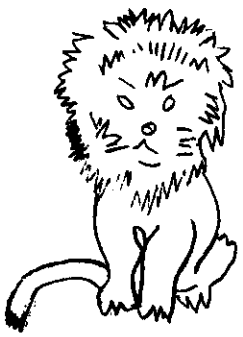
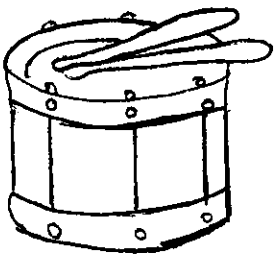
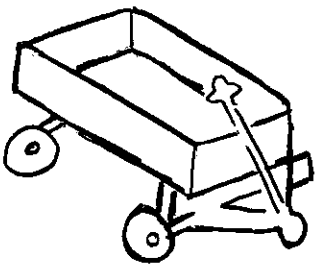
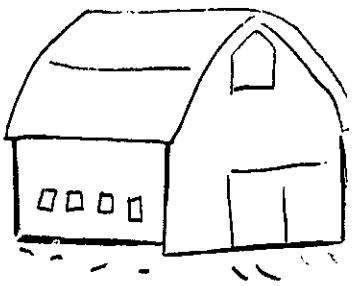
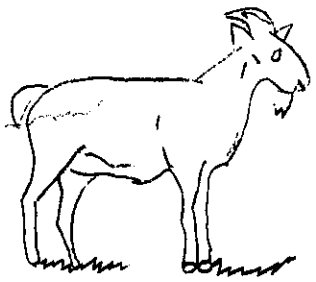
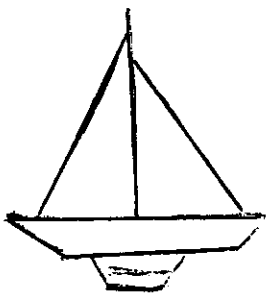


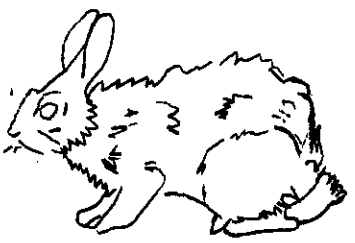
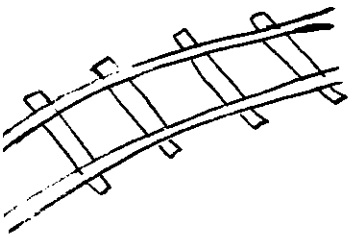
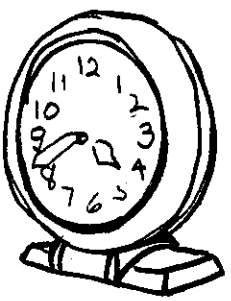
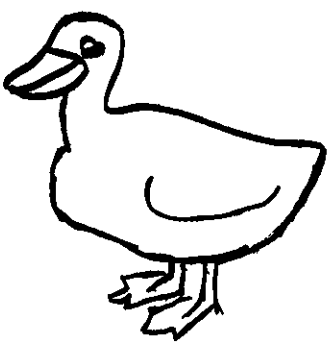









PHONOGRAPH RECORD

Hello boys and girls. Are you all ready. I hope you are because today we are going to do something different. Are you all good listeners? You are going to hear some sounds. Do you think you can tell me what they are? Your teacher has given you a sheet of paper and a marker. Look at your paper. Do you see the box with the big one at the top? See the first line of numbers in the box? They say 1, 2, 3, Put your marker under this first line. Have you all put your markers under the first line of numbers that says 1, 2, 3? Good! Listen carefully. If you think the sound you hear is a dog barking, you will circle number 1. If you think the sound you hear is a seal barking, you will circle number 2. If you think the sound you hear is a baboon, you will circle number 3. Be sure to listen very carefully and remember, if you think you hear a dog barking, circle number 1. If you think you hear a seal barking, circle number 2. If you think you hear a baboon, circle number 3. Ready now. Listen carefully. (Sound plus 15 seconds. Sound: dog barking)

Did you all circle number 1? That's correct. It was a dog, wasn't it? Let us move the markers down to the next line. See the numbers 1, 2, 3? Are all the markers on the second line? Good! Now listen carefully to another sound. If you think the sound you hear is a fire, circle number 1. If you think the sound you hear is birds chirping, circle number 2. If you think the sound you hear is chickens, circle number 3. Are you ready? Listen carefully and remember, circle number 1 if you think you hear fire. Circle number 2 if you think you hear birds chirping. Circle number 3 if you think you hear chickens. Listen carefully now! (Sound plus 15 seconds. Sound: chickens)

Did you all mark a number? Fine! You are good listeners. Now move your markers down to the next line and be ready to listen again. If you think you hear someone snoring, mark number 1. If you think you hear cows, mark number 2. If you think you hear a donkey, mark number 3. Are you ready to listen? Remember--Circle number 1 if you hear someone snoring, circle number 2 if you hear cows, circle number 3 if you think it is a donkey. Listen everyone. (Sound plus 15 seconds. Sound: cows.)

I hope everyone marked a number. Good! Ready now. Move your markers down to the next line and listen carefully. If you think this sound is a cat, circle number 1. If you think it is a fire siren, circle number 2. If you think it is a doll crying, circle number 3. Listen very carefully and remember--circle number 1 if you think you hear a cat. Circle number 2 if you think you hear a fire siren. Circle number 3 if you think you hear a doll crying. Ready now. Listen. (Sound plus 15 seconds. Sound: cat).

Now move your markers down to the next line and be ready to listen carefully for another sound. If you think the sound you hear is a train mark number 1. If you think the sound you hear is traffic in the street, mark number 2. If you think the sound you hear is a factory, mark number 3. Are you ready? Don't forget. If you think you hear a train, circle number 1. If you think you hear traffic in the street circle number 2. If you think it is a factory, circle number 3. Listen carefully. (Sound plus 15 seconds. Sound: traffic)

Were you listening? Did you circle one number? Let's move the markers down to the next line and listen for another sound. If you think the sound you hear is birds, circle number 1. If you think the sound you hear is children giggling, circle number 2. If you think you hear frogs, circle number 3. Be sure to listen carefully, and circle number 1 if you think you hear birds. Circle number 2 if you think you hear children giggling. Circle number 3 if you think you hear frogs. Listen everyone. (Sound plus 15 seconds. Sound: birds)

You are good listeners. Ready now. Move your markers down to the next line. Listen carefully. You are going to hear another sound. If you think the sound you hear is a fire alarm, circle number 1. If you think the sound you hear is an alarm clock, circle number 2. If you think the sound you hear is a telephone, circle number 3. Is everyone ready to listen? Remember, mark number 1 if you think you hear a fire alarm, mark number 2 if you think you hear an alarm clock, mark number 3 if you think you hear a telephone. Ready now. Listen. (Sound plus 15 seconds. Sound: telephone)

Have you all circled the number? Then move your marker down again to the next line. Listen carefully. If you think this is the sound of icicles falling, circle number 1. If you think it is the sound of dishes rattling, circle number 2. If you think it is glass breaking, circle number 3. Be ready now and be sure you circle number 1 if you hear icicles falling. Circle number 2 if you head dishes rattling. Circle number 3 if you hear glass breaking. Ready. Listen. (Sound plus 15 seconds. Sound: glass)

Ready. Now move your markers to the next line and listen very carefully. If you think this is the sound of people clapping, mark number 1. If you think it is the sound of a circus, mark number 2. If you think it is the sound of children playing, mark number 3 Listen and be very careful. Circle number 1 if you hear people clapping. Circle number 2 if you hear a circus. Circle number 3 if you hear children playing. Now listen. (Sound plus 15 seconds. Sound: children playing)

Good! Now we can move our markers to the last line in the box. Be ready to listen to the last sound in this part. If you think it is the sound of a trolley, circle number 1. If you think it is the sound of a car stopping, circle number 2. If you think it is the sound of a car starting, circle number 3. Remember to listen very carefully and circle number 1 if you hear a trolley. Circle number 2 if you hear a car stopping. Circle number 3 if you hear a car starting. Now listen everyone. (Sound plus 15 seconds. Sound: car)

There that was fine. We are finished with this part. Now we are ready to listen for something different. Find the box on your paper with the big 2 at the top. See the numbers in each line They are 1.....2. Place your marker under the first line. Be sure you have the right place. I'll wait for you. There. Are you ready? Listen now, so you will know what to do. Can you tell the difference between a high and a low sound? I think you can, if you listen carefully. I'll help you with the first pair. Be ready now. You are going to hear two people singing for you. One voice will be high and one will

be lower. Listen and be sure. Circle number 1 if the first voice is higher, but if the first voice is lower you will circle number 2. Are you ready now ? Remember if the first voice you hear is the higher voice, circle number 1, but if it is the lower voice, circle number 2. Ready now. Listen very carefully. (Sound plus 15 seconds.)

Good! Did you circle number 1? Because the first voice was higher, wasn't it? Move your markers down to the next line and be ready to listen while two people say "Hello" to you. One voice will be higher and one voice will be lower. If the first voice is the higher one, you will circle number 1. But, if the first voice is lower, you will circle number 2. Are you ready now? Remember, if the first voice is the higher one, circle number 1. But if the first voice is the lower one, circle number 2. Ready now. Listen very carefully. (Sound plus 15 seconds)

Were you all listening? Fine! Move your markers down to the next line and listen for two groups of sounds. If the first group is higher, you will circle number 1, but if it is lower, you will circle number 2. Listen carefully and remember to circle number 1 if the first group is higher or number 2 if the first group is the lower. Listen. (Sound plus 15 seconds. Sound: clarient)

Did you mark a number? Be sure to move your markers down another line. Here are two people laughing. Listen to them and be sure to circle number 1 if the first laugh is higher or number 2 if the first laugh is lower. Remember, if the first laugh is higher, circle number 1 or number 2 if the first laugh is lower. Ready. Listen. (Sound plus 15 seconds)

Good! I hope everyone marked a number. Let's move our markers now to the next line and be ready. A lady is going to speak to you twice. If she speaks higher the first time, circle number 1, but if she speaks lower the first time, circle number 2. Now listen and remember, mark number 1 if she speaks higher the first time or number 2 if she speaks lower the first time. Listen carefully. (Sound plus 15 seconds)

Did everyone circle a number? Fine! Now move your markers down to the next line and listen to these sounds. There are two groups. One group will be higher and one group will be lower. Be sure to circle number 1 if the first group is higher or number 2 if the first group is lower. Don't forget if the first group of sounds is higher circle number 1. If it is lower, circle number 2. Listen carefully. (Sound plus 15 seconds. Sound: tapping on dishes)

Did you circle one number? That was fun, wasn't it? Now let's try counting. Can you count well? See how your paper is fixed to help you. Look at the part of your paper with a big 3 at the top of it. On each line there are three numbers. You just have to circle the right one. Put your markers under the first line. See the numbers 1, 3, 5? Be ready to listen and count carefully. The first sound you will hear is a whistle. Count the number of times you hear it and circle the right number. Listen carefully and count. Be sure to circle only one number. Ready. Listen.

Good. Did you all circle number 3? The whistle was blown three times, wasn't it? Move your markers down one line. See the numbers 2, 4, 6? Get ready to listen now, to a big clock striking. Count the

strokes carefully and circle the correct number. Remember to listen and count. Be sure to circle only one number. Listen now.

That was a lovely sound, wasn't it? Now move your markers to the next line. The numbers say 3, 5, 7. Now the clock will strike again. Listen carefully and count the strokes. Then circle the correct number. Remember to count carefully and circle only one number. Listen everyone.

Very good, you can count, can't you? Let's move our markers down to the next line. The numbers are 4, 6, 8. Is everyone ready? Now listen to the frog. Listen carefully and count how many croaks he makes. Be sure to circle the correct number. Count carefully and circle only one number. Here he is. Listen.

Did you remember to mark only one number? Fine. Let's move our markers down to the last line in this box. See the numbers 5, 6, 7? Are you ready to count now? You will hear coins being put into a cash register. Count them carefully. Circle the correct number. Remember to listen carefully. Listen now.

There. That was very good. Can you find the last box on your paper? See the big 4 at the top of it? Put your marker under the first line in this box. The numbers say 1, 2. Now we are ready to listen for something different. You can tell when a noise is loud or soft, can't you? Each sound is going to be made for you twice, once loudly and once softly. Listen to the sounds and if the first one you hear is louder, circle number 1, but if the first sound is the softer one, circle number 2. Remember to listen carefully and mark number 1 if the first

sound is louder or number 2 if it is softer. Ready now. Listen. (Sound: Crickets chirping and frogs croaking)

Fine. Move your markers to the next line and listen for another sound which is made twice. If you think the first one is louder, circle number 1, but if you think it is softer, circle number 2. Listen carefully and don't forget, mark number 1 if you think the first sound is louder. Mark number 2 if you think the first sound is softer. Listen everyone. (Sound: Thunder)

Now move the markers again down to the next line and listen for another sound which is made twice. If you think the first one is louder, circle number 1. But if you think it is softer, circle number 2. Listen carefully and don't forget, mark number 1 if you think the first sound is louder. Mark number 2 if you think the first sound is softer. Listen everyone. (Sound: rainfall)

Just one more now. Move your markers to the last line and be ready to listen carefully. Circle number 1 if you think the first sound is louder or number 2 if you think the first sound is softer. Remember, if the first sound is louder, mark number 1 or if it is softer, mark number 2. Careful now. Listen.

Thank you boys and girls. You are very good listeners. Perhaps some day we may work together again. Good-by now.

Name_____

1.

1	2	3
1	2	3
1	2	3
1	2	3
1	2	3
1	2	3
1	2	3
1	2	3
1	2	3
1	2	3

2.

1	2
1	2
1	2
1	2
1	2
1	2

3.

1	3	5
2	4	6
3	5	7
4	6	8
5	6	7

4.

1	2
1	2
1	2
1	2

LANGUAGE

Directions for classification

Say:

Write your name on the top line.
(examiner indicates on his sample)

You must listen carefully so you will know what to mark.

When you mark your answers put an X on whatever you are told.
(examiner illustrates on the board)

Let's do row one together.
Mark all the things you would find in a toy store.
What did you mark?
Yes, the kite, the bear, and the cart.

I'm not going to help you any more.

Allow five seconds for response for each row.

Say:

Move your marker down.

The following are the words in the order in which they are to be given.

2. things to eat
3. farm animals
4. fruits
5. things a boy would like
6. things a girl would like

Page 2

Say:

Turn to the next page.
(check to see that all have page 2)

Say:

On this page you are to mark the things in each row that go together.
Be sure to mark all the things that go together.
There may be more than TWO.

On this page find number 7 and mark the things that go together.

Allow five seconds for each row.

Say:

Move your marker down to number 8.

Continue in the same way through number 9, 10, 11 and 12.

Directions for picture interpretation

Birthday Picture

Say:

Here is a picture about Jack's birthday party.
I'm going to ask some questions about the picture.
The numbers on the picture will help you find the answers.
We're going to put our answers right here. (examiner indicates)

Put your marker under A.
Find the boy whose birthday it is.
Put the number nearest him in the box next to A.

Move your marker down under B.
Find what tells what kind of party it is.
Put its number in the box next to B.

C. Find the person who has a surprise for Jack.
D. Find what tells us that the children have been playing games.
E. Find who has won a prize.
F. Find whom Jack will thank for giving him a bicycle.
G. Find the smallest boy.

Move your marker to the top of the page under letter H, so that you are looking at the numbers 4, 7, 9.

REMEMBER, the picture tells the answer.

Put an X on
H. The number that tells us how old Jack is.
I. How Jack will look when he sees his new bicycle.
J. How father brought the bicycle home from the store.
K. What you think Jack will do when the party is over.

Here are three titles we could give this picture.
I will read them to you.
Put an X on the one you think is the best title for this picture.
'Birthday Games', 'The Birthday Cake', 'The Birthday Party.'

Picnic Picture

Say:

Turn the page so that you are looking at this picture.
(examiner shows the picnic picture)
I am going to ask some questions about this picture.
You will write the number that answers the question in the right box.

Put your marker under A.

A. Find the person who is helping mother.
B. Find the person who is helping father.
C. Find the person who is cooking.
D. Find the person who is doing something naughty.
E. Find the person who has been in the woods.
F. Find what the dog wants.
G. Find what the little girl wants.

Move your marker to the top of the page under letter H, so that you are looking at the pictures of the woman.

Put an X on

H. How mother will look when she sees what her little girl is doing.
I. How father will look when he sees what the dog is doing.
J. How you think they came to the picnic.
K. The little girl should not go in the water.
Put an X on what she is getting all wet.

Here are three titles we could give this picture.
I will read them to you.
You put an X on the one you think is the best title for this picture.
'The Picnic', 'Jack and Jane Help', 'Getting Wood.'

Farm Picture

Say:

Turn the page so that you are looking at the picture about the farm.
The name of the boy in the picture is Jack.

Put your marker under A.

A. Find the lamb that Jack meant to feed.
B. Find the lamb that is eating the food.
C. Find the lamb that Jack is petting.
D. Find to whom grandfather is calling.
E. Find to whom grandfather is pointing.
F. Find whom grandfather wants to come and see.
G. Find who is hurrying.
H. Find who will be surprised.

Move your marker to the top of the page under letter I, so that you are looking at the pictures of the man with the hat on.

Put an X on

I. How grandfather would look if we could see his face.
J. How Jack will look when he finds out the lamb behind him is eating the food.
K. How mother will look when she sees what is going on.

Directions for sequence

Say:

These 4 pictures tell a story when they are put in the right order.
Look at all the pictures first to see what the story is about.
Then think which picture should come first.
Put 1 in the box (examiner shows the box) in that picture.
Then think which picture should come next.
Put 2 in the box in that picture.
Think which picture should be next.
Put 3 in the box in that picture.
Think which picture should come last and put 4 in the box in that picture.

When you have finished put your pencils down so that I'll know that you are through.

When all but the very slowest have finished ask all to put their pencils down so that you may go on to the next page.

Number 2

Say:

These 4 pictures tell another story.
Let's see if you can number them the way they'd happen.

(Give the same directions about putting their pencils down when they are through.)

Number 3

Say:

This story has 5 pictures.
Look at them all.
Put these 5 pictures in the right order.
You will use the numbers 1, 2, 3, 4, and 5 this time.

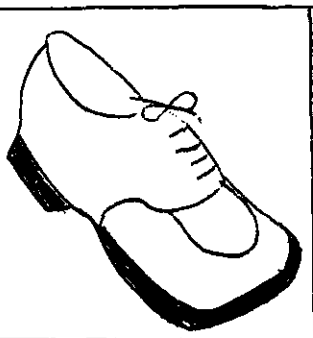
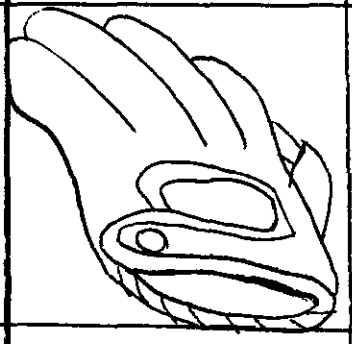
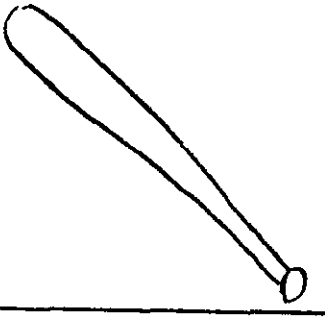
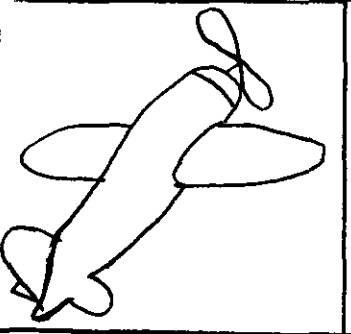
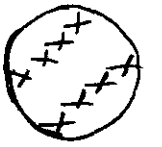
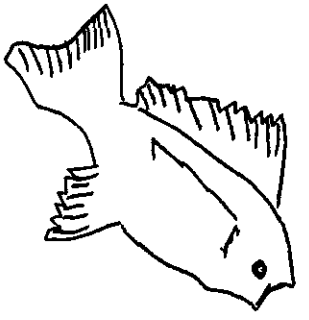
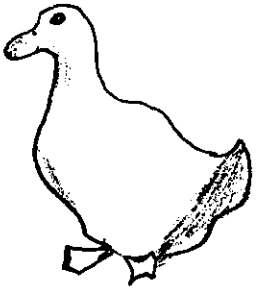
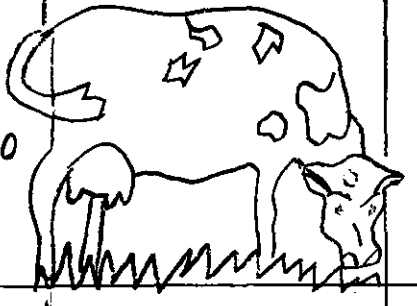
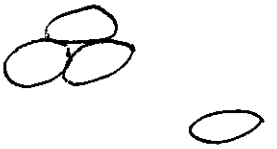
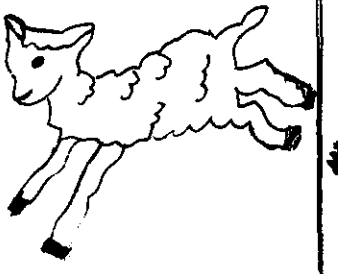
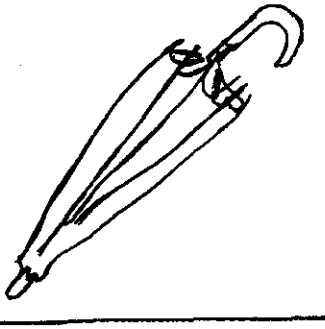
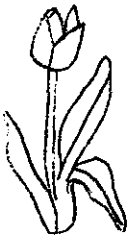
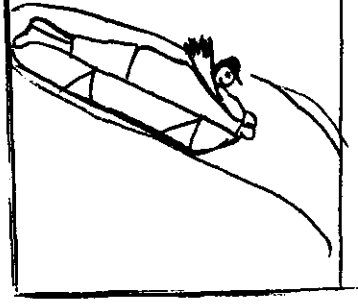
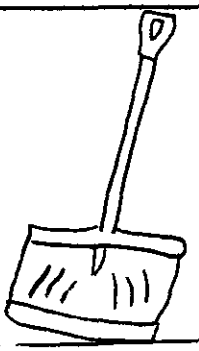
(Give the same directions about putting their pencils down when they are through).

Number 4

Say:

Here are seven pictures to put in the right order.
You will use the numbers 1, 2, 3, 4, 5, 6, and 7 this time.
(Same directions about pencils.)

Here are three titles we could give this picture.
I will read them to you.
You put an X on the one you think is the best title for the picture.
'Grandfather is Calling', 'A Week At The Farm', 'A Joke on Jack.'

7				
8				
9				
10				
11				
12				

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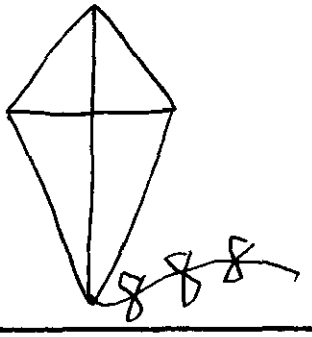
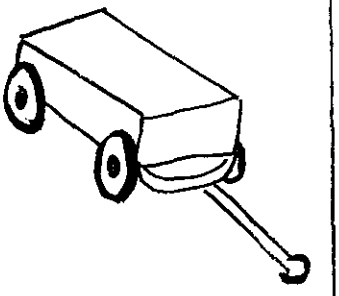
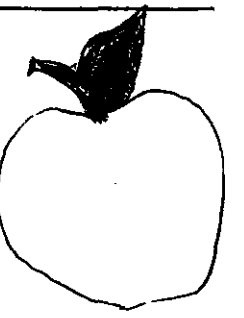
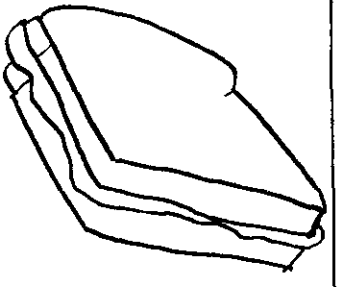
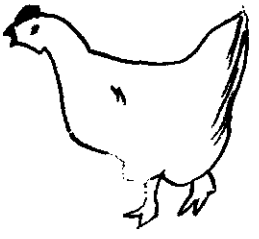
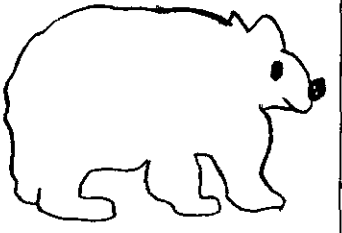
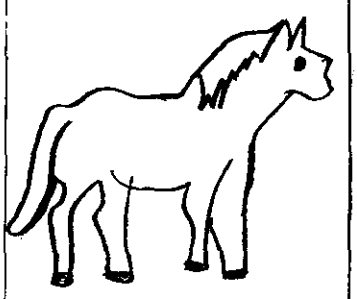
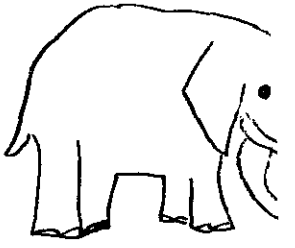
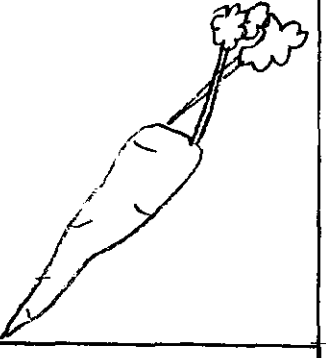
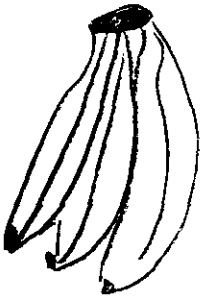
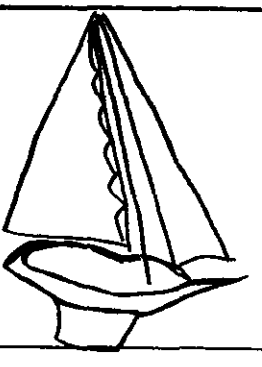
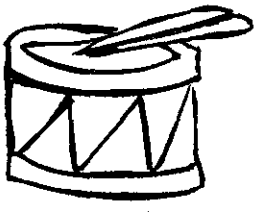
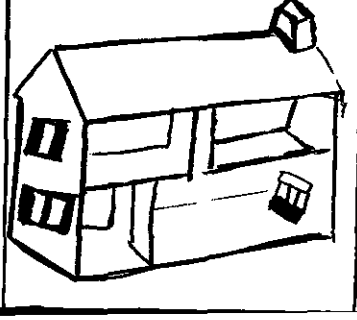
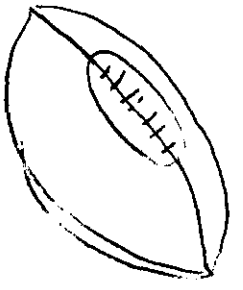
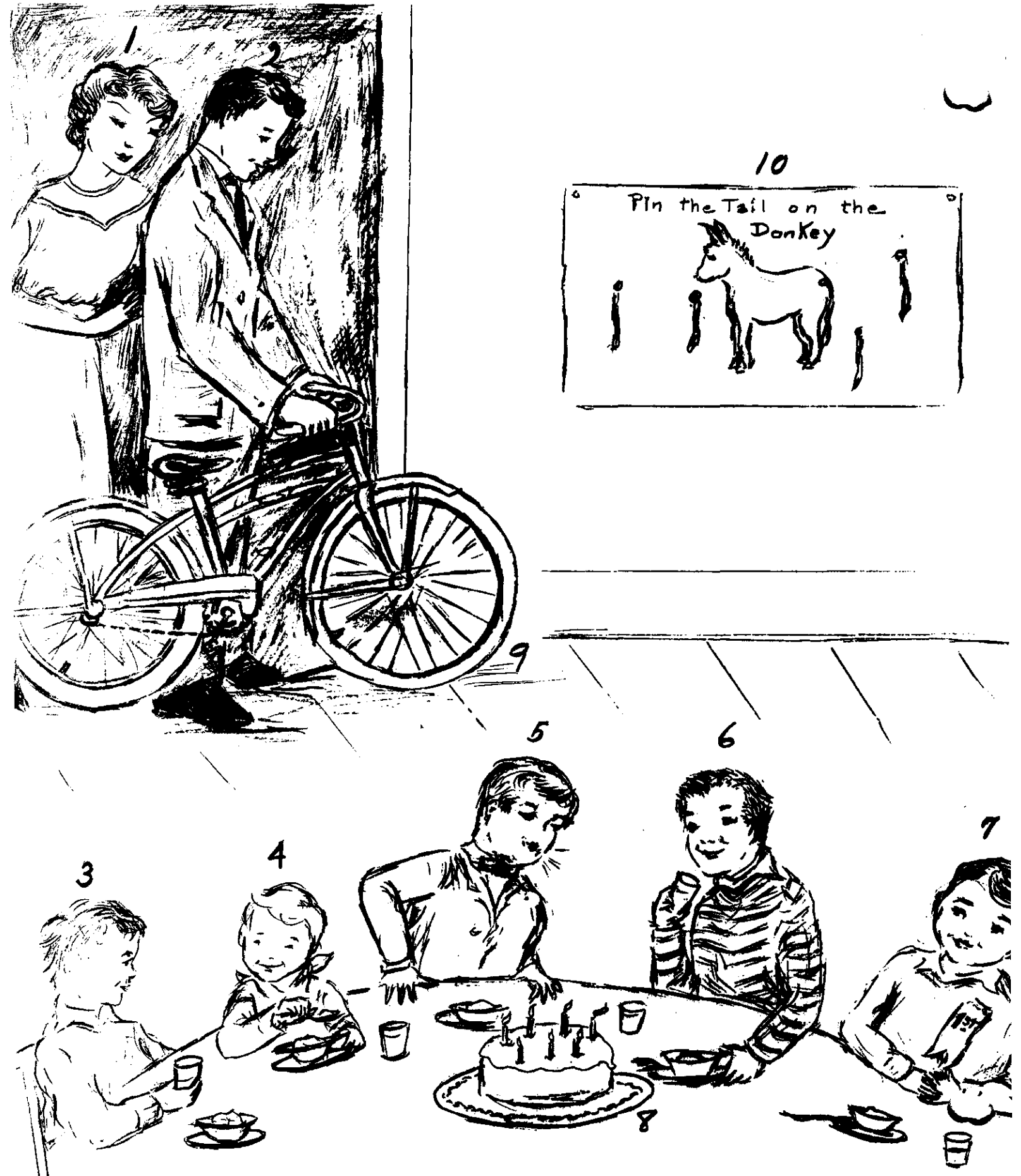
1				
2				
3				
4				
5				
6				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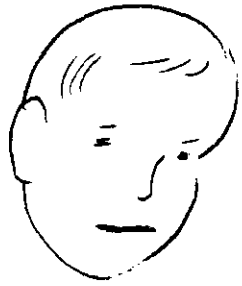
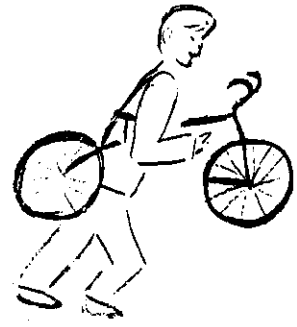
B.	I			
C.	J			
D.	K.			
E.	L.	Birthday Games	The Birthday Cake	The Birthday Party
F.				
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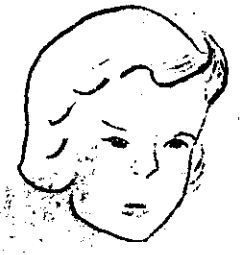
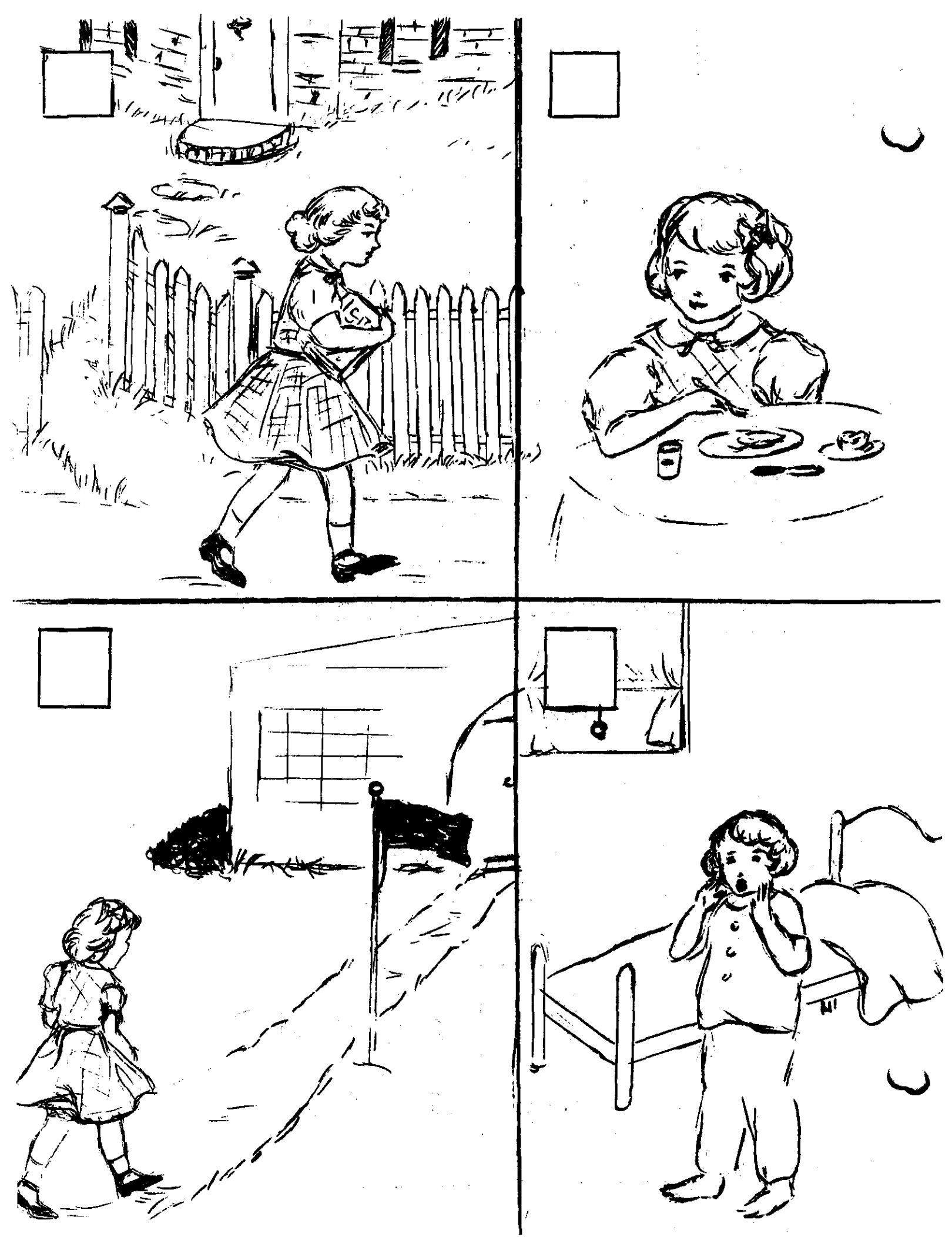
E F	K			
G H	L	Grandfather Is Calling	A Week At The Farm	A Joke On Jack



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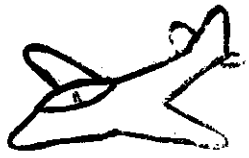
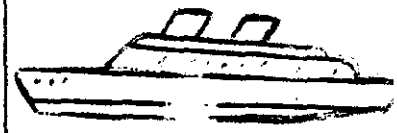
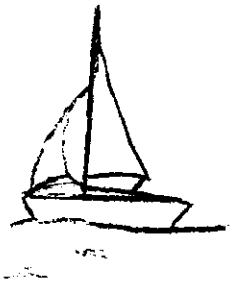
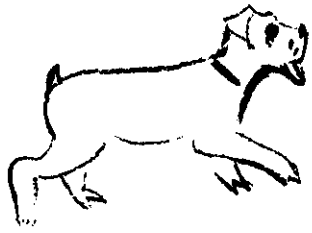
J.			
K.			
L.	The Picnic	Jack and Jane Help	Getting Wood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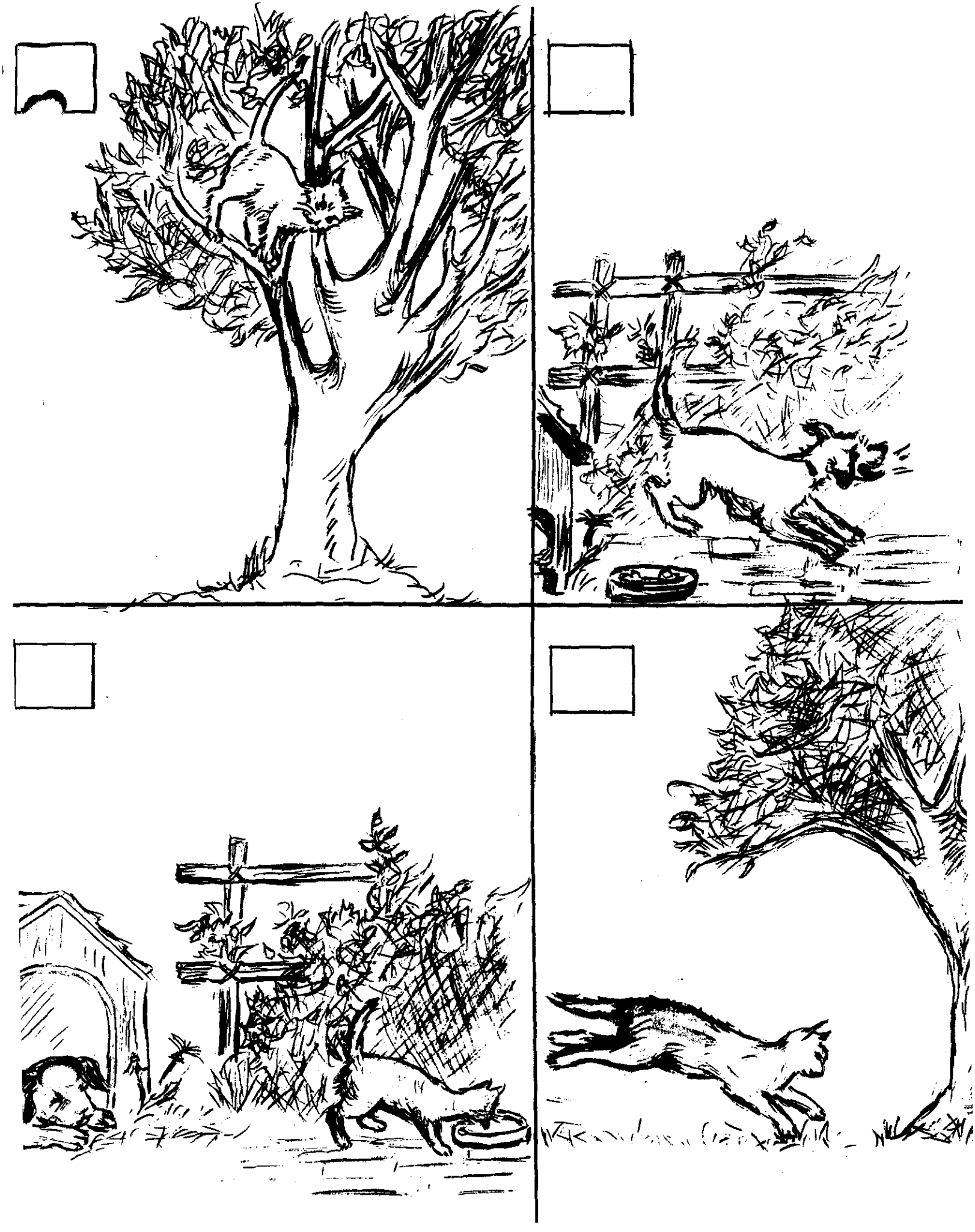
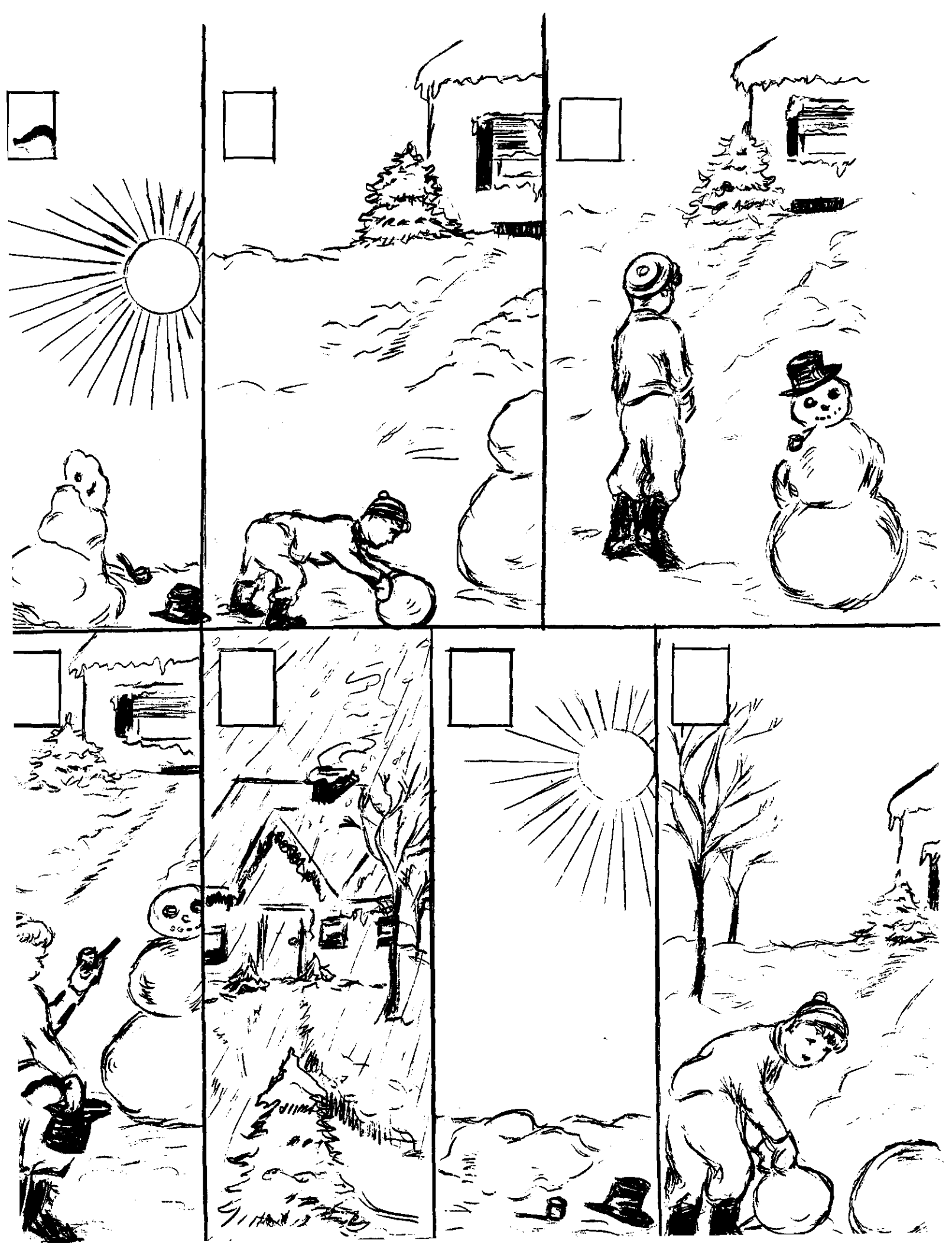




MOTOR

Directions for folding

Say:

Take the paper like this. See if you can get a fold right in the middle. Be sure the corners meet. Watch. Do it just as I did. Now let's fold it again. Watch. Open it all up now. Cut on the fold as I am doing. Keep cutting right on the fold. Now take one of the pieces of paper. We're going to draw two circles. Draw one circle here and another there. (Demonstrate on board.) Now, let's cut one of the circles out. Put these papers on the envelope on your desk.

Directions for cutting

Say:

Here is a picture of a boat. We are going to cut it out. Try not to cut off the sails. Do your very best. (Have examiner do this with the class.) Put the boat in the envelope you have on your desk. See if you can put your name or your initials on the outside of the envelope.

Directions for reproducing a pattern

Say:

Look at the circle marked with the letter a at the top of the page. I forgot to finish the line. Would you finish the row? Each row is different. Finish each row just as I have begun it. Make sure it looks just like mine.

Let's do number 1.
Do number 2.
Do number 3.
Do number 4.
Do number 5.

Directions for tracing

Say:

Here are pictures of a balloon, a carrot, a bell, and a house that aren't quite finished. See if you can make a line to finish the pictures. Draw lines connecting the dots.

Directions for maze

Say:

This is a picture of a person on his way to school. Show us how he should go to school by marking the paper with your crayon.

Let's put your crayon right here where he starts. (Demonstrate.) Don't go off the sidewalks!

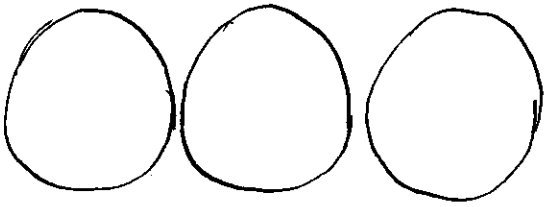
Directions for Coloring

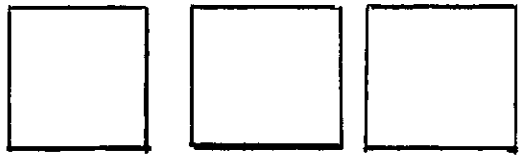
Say:

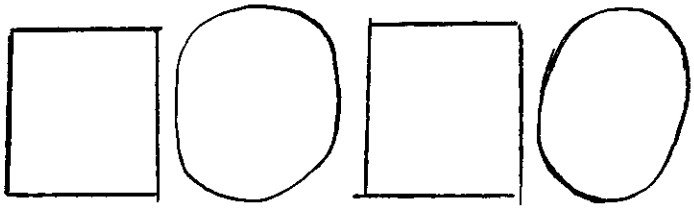
Here are some pictures for you to color. Color them the way you want them to look. Do your very best!

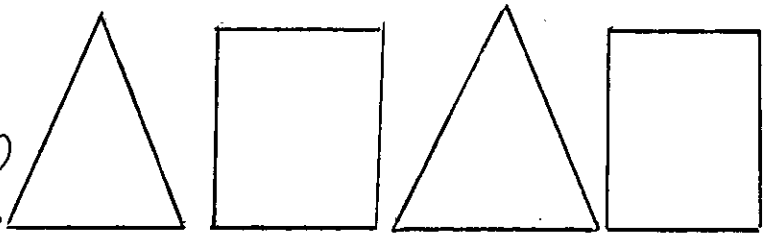
Name _____

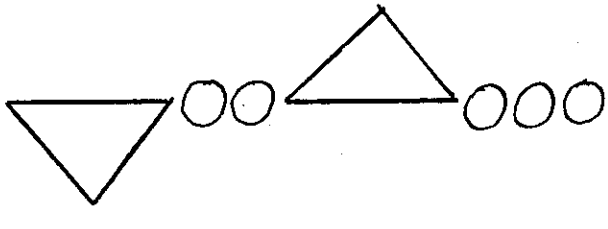
School _____

a. 

1. 

2. 

3. 

4. 

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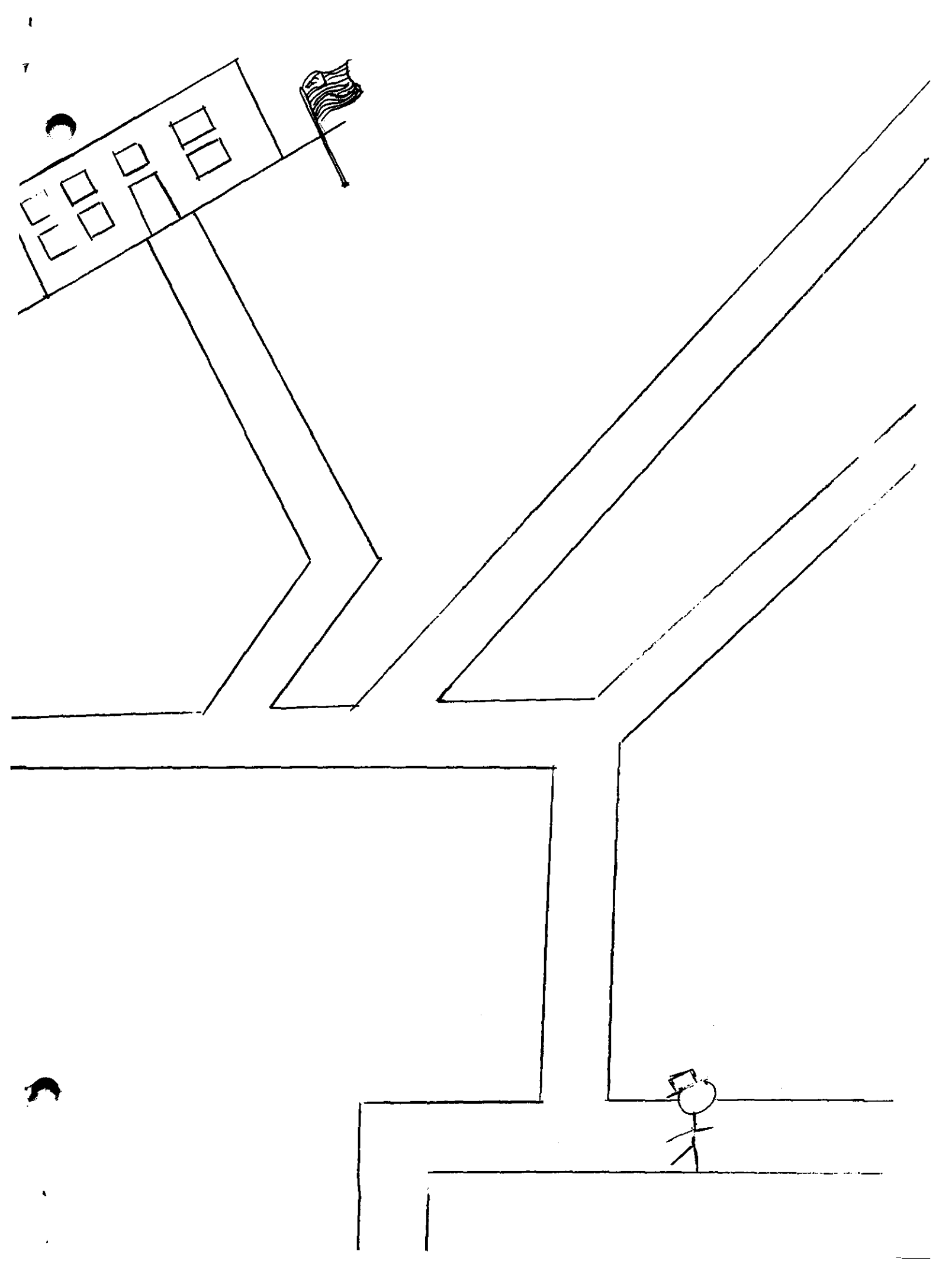
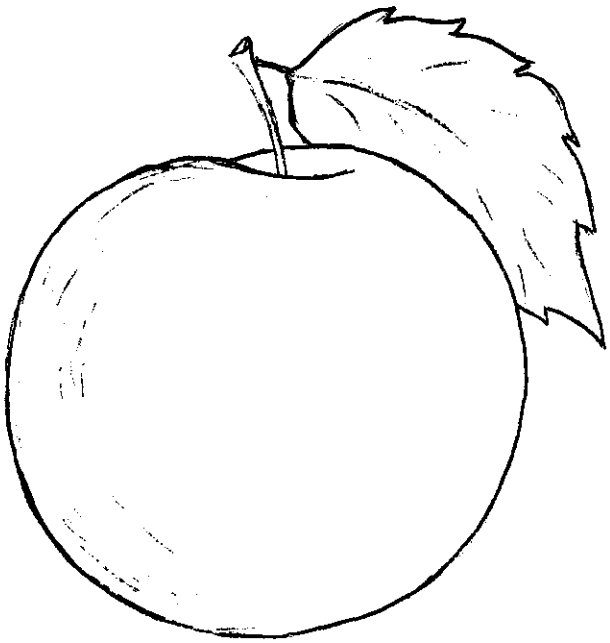
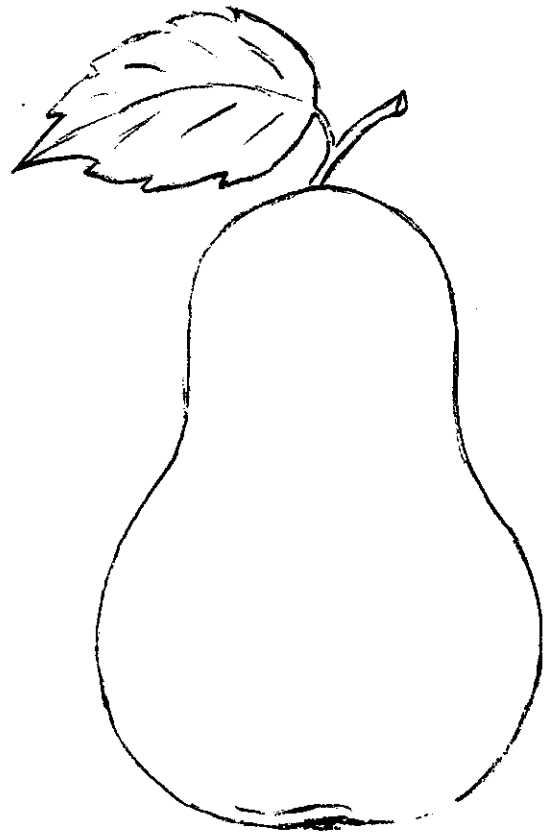
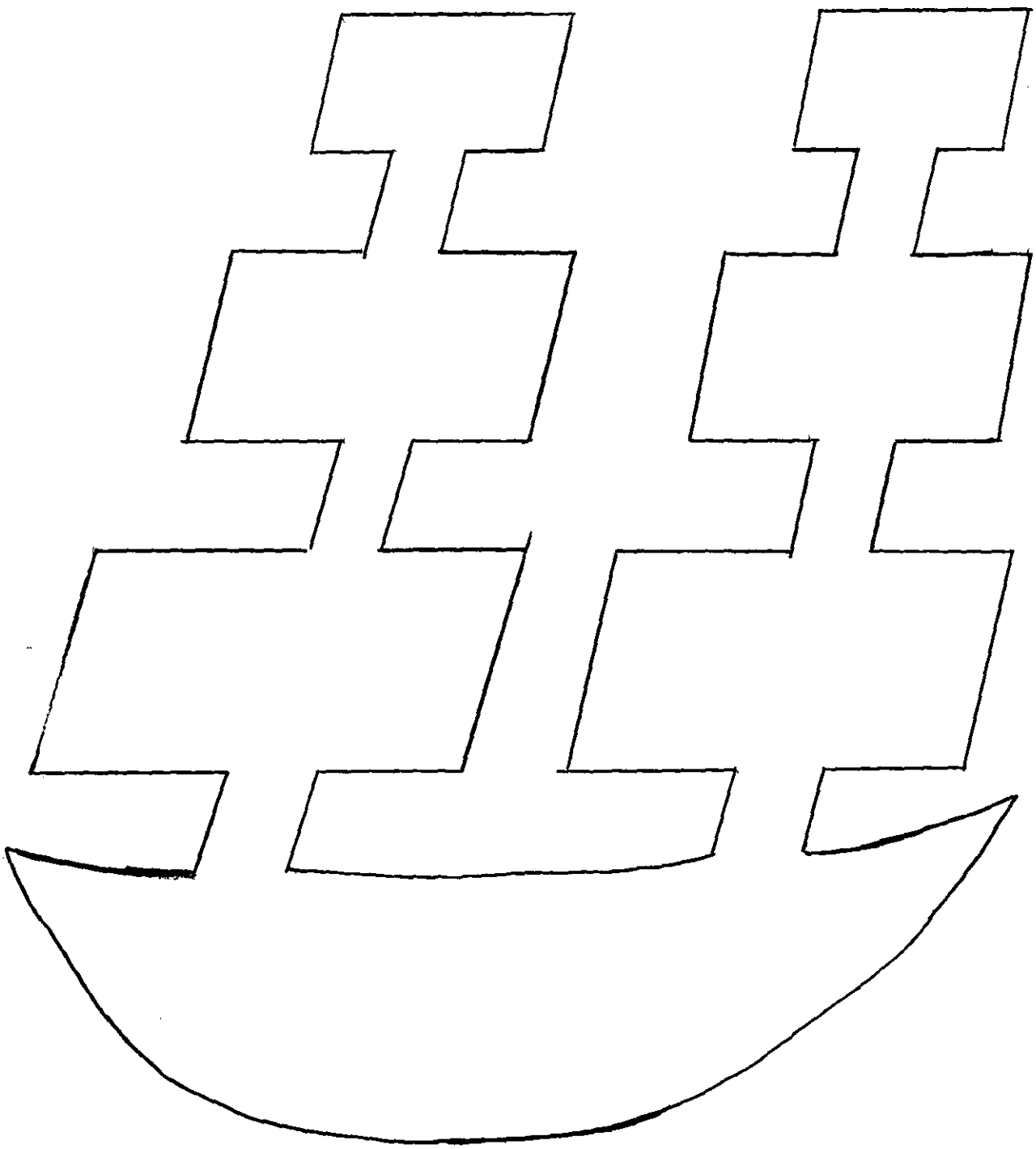








VISUAL DISCRIMINATION

Directions for picking out the unlike object

Say:

We are going to play some games with pictures. We're going to mark some of them but not all of them. We are going to mark the picture which is different. In each row of pictures there are three pictures just alike and one which is different. Put a mark like this (make an "X" on the blackborad) on the picture which is different.

Put your marker under the first row of pictures. Are all the pictures the same? (They say "no"). Which one is different? (The square). Let's put a mark on the square because it is not like the other pictures in the row. (Check to see that everyone is marking correctly).

(Continue to say, "Move your marker. Mark the picture", as they complete each row).

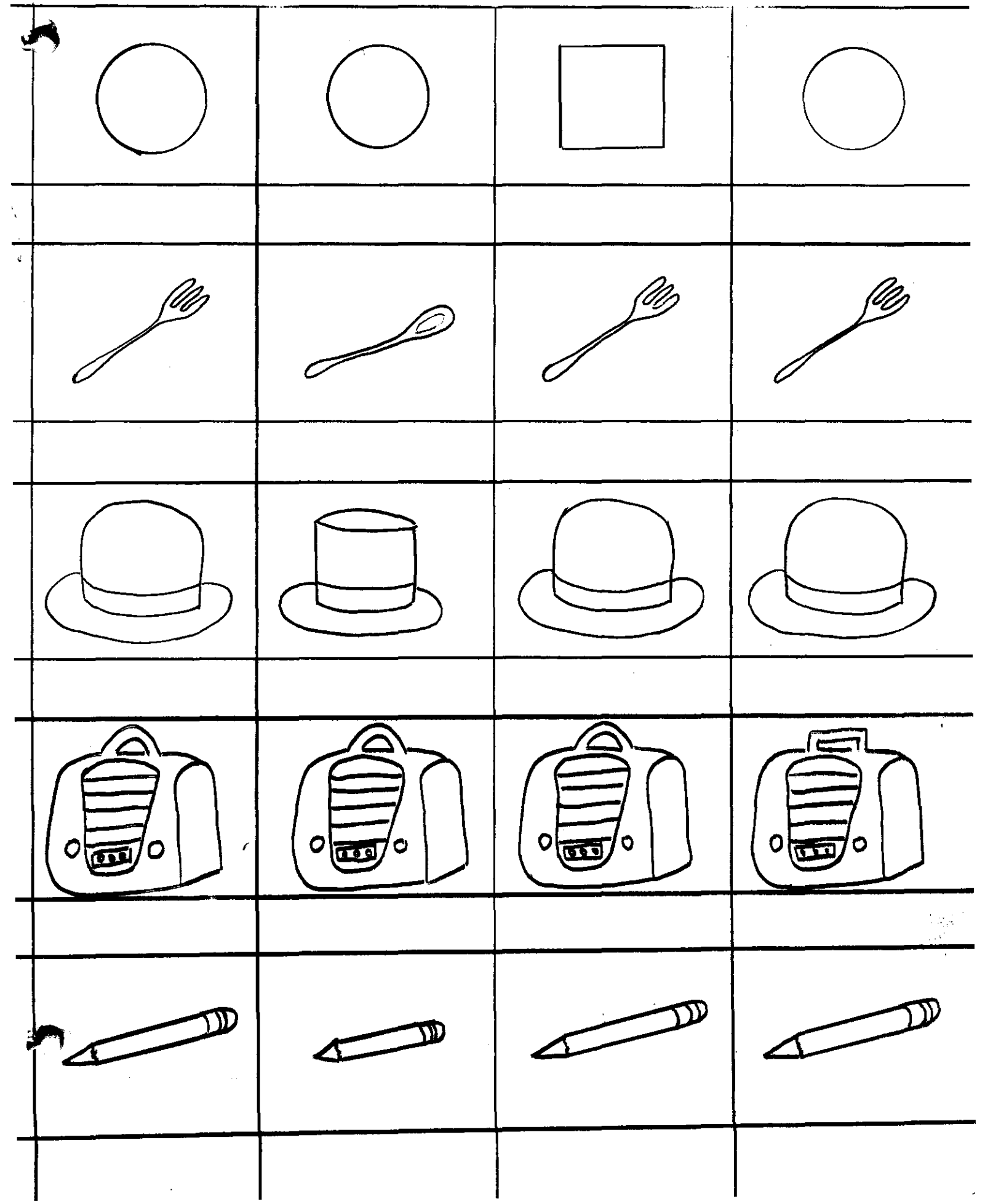
VISUAL DISCRIMINATION

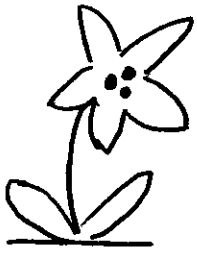
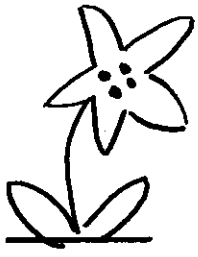
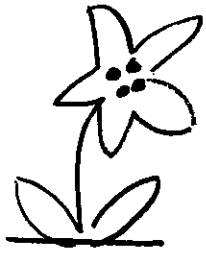
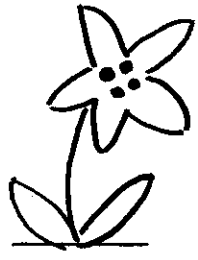
Directions for matching

Say:

Now we're going to mark the picture in each line which is like the first one in the line. Put your marker under the first row. Look at the picture in the first box. Put a mark on the other one in the row which is just like it. (Check to see that everyone is marking correctly) Continue to say "Move your marker. Mark the picture." as they complete each row.

Name _____

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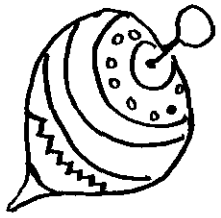	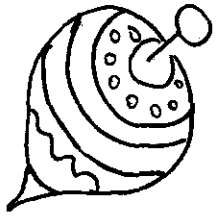	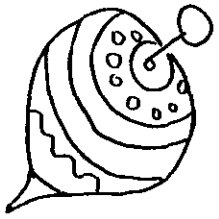	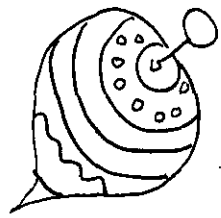
		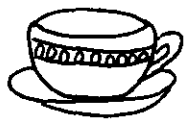	
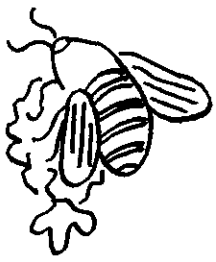	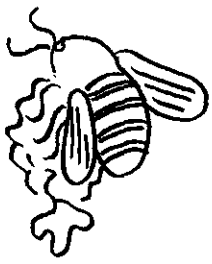		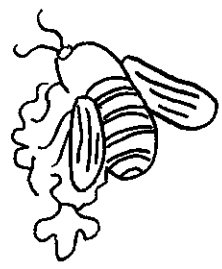
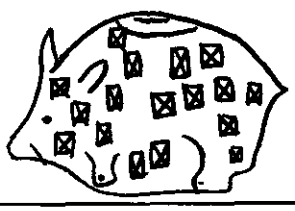	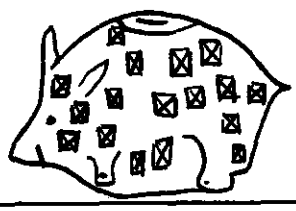	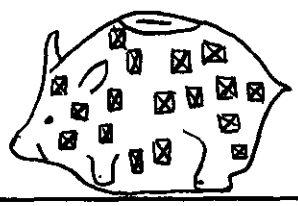	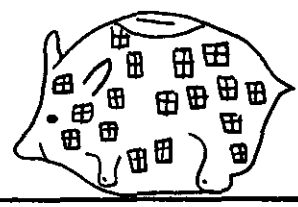
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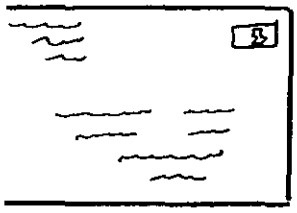
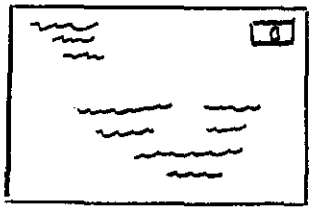
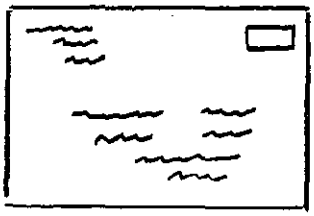
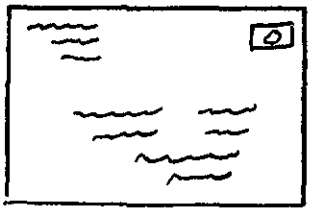
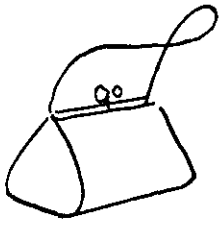

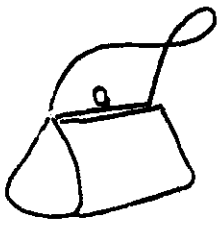

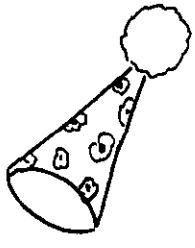
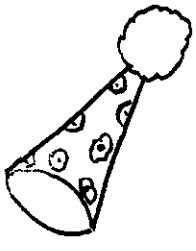
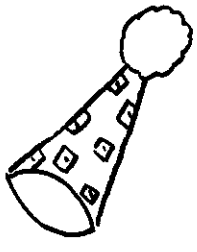
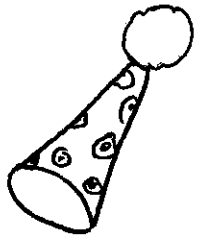

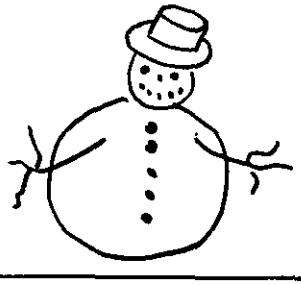


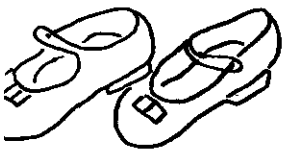
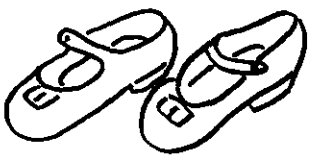
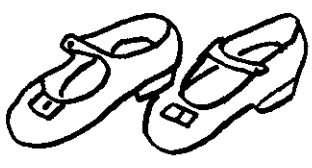
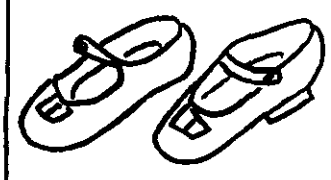

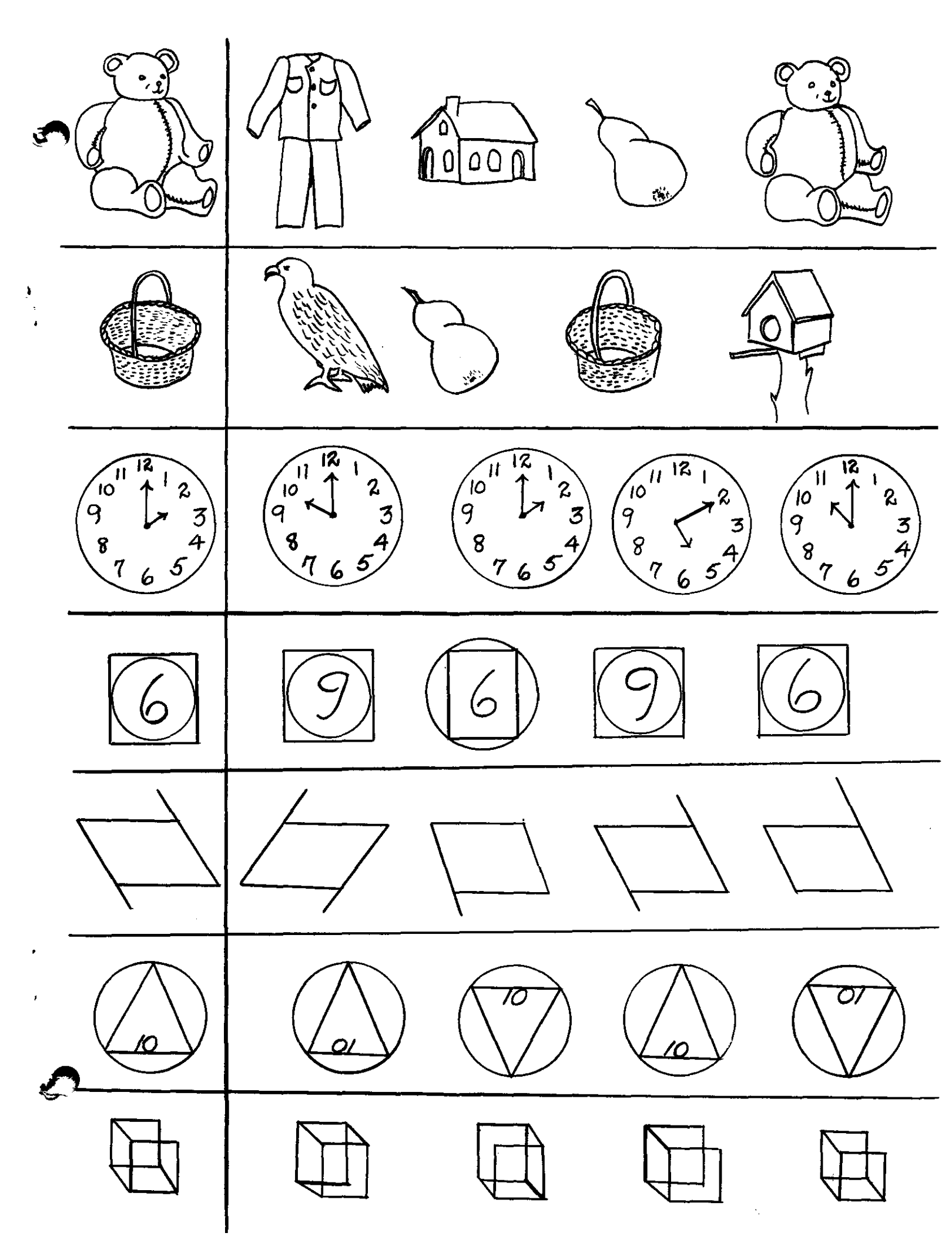
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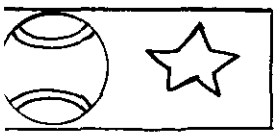

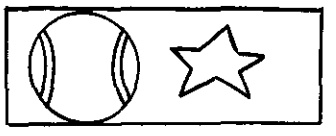

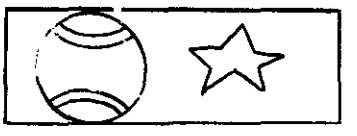

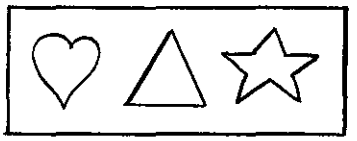

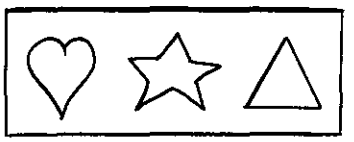

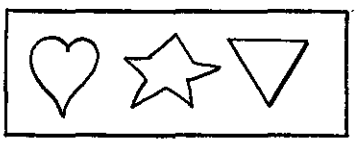

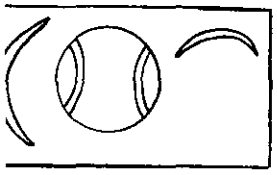

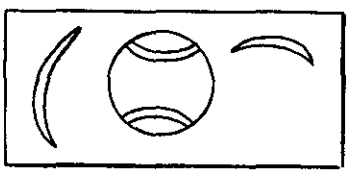

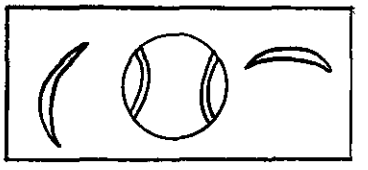

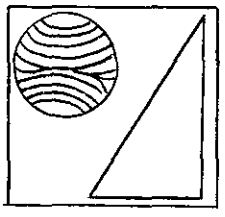

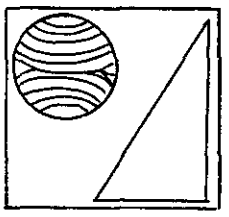

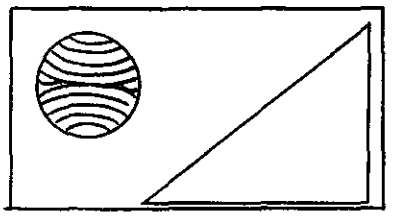

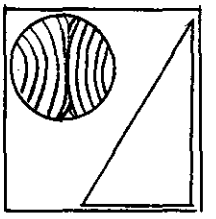

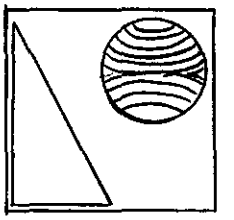

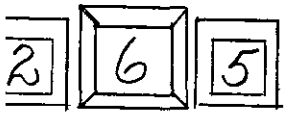

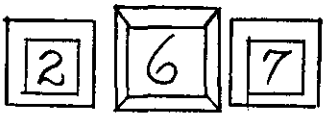

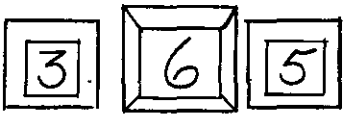

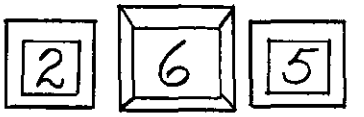

2 6 5	2 6 7	3 6 5	2 6 5

459	456	945	459	549	495
674	647	674	974	746	467

2156	2165	2156	2516	2615
10010	10101	10001	01001	10010
69745	69754	69457	69745	96745
Mother	Peter	Jane	Mother	Mary
Father	Father	Frank	Frances	Frank
many	money	may	many	making
want	wish	want	went	when
this	thin	that	then	this
these	those	these	them	those
kind	kick	kid	kind	king
though	though	through	thought	through

B. U. GROUP TEST

Test I A Identifying Lower Case Shown

Say: "First we are going to work with the line on this side of the page. (Demonstrate) I'll hold up a card that has a letter or word on it which looks like one of the letters in the first line. (Hold up the card.) Can you find the letter or word in the first line that looks just like this? Draw a ring around it.

Move your marker down to the next line. Be sure to keep your eye on the card all of the time. Watch!"

Hold the card up for five seconds. Put the card down and

Say: "Find the letter or word and draw a ring around it. (Pause) Move your marker down."
Before each line

Say: "Watch"
After five seconds

Say: "Find the letter or word and draw a ring around it. (Pause) Move your marker down."

Test I B Identifying Words Shown - directions same as above

Test II A Identifying Letters Named, Capitals

Say: "Now I am going to tell you which letters to put a ring around. Put your marker under the first line. Listen very carefully. Find 'A'. Draw a ring around 'A'. (Pause) Move your marker to the next line."
Before each line

Say: "Listen! Fine ' '. Draw a ring around ' '.
(Pause) Move your marker down."

Test II B Identifying Letters Named, Lower Case - directions same as above

Test III Hearing Sounds in Words

Print on the board the letters p b t n a, just as they appear on the first line in the test.

Say: "Today we are going to use our eyes and ears to see if we can find the right letters in words. You will need to listen and look very carefully. Put your marker on the first line under the big letter A." (Check to see that all children have the right place.) "I'll say a word and you listen to see if you can find the letter the word be-

gins with. Listen - top. What is the first letter in top? Yes, t so you draw a circle around t on your paper." (Teacher draws a circle around t on the board.) Check to see that each child has circled the correct letter. "Move your marker to the next line below. Now I will not help you any more. Be sure you look and listen carefully. Ready. Draw a circle around the first letter in cup." Repeat the word, if necessary. Wait until the children have finished making a circle around the letter. This usually takes not more than five seconds. Count to five slowly on all later words in this test. Directions for the rest of the words: "Move your marker to number 3. Find the first letter in dog."

4. garden	9. machine	14. handle
5. recess	10. fountain	15. every
6. noise	11. vacation	16. olive
7. lemon	12. polish	17. waste
8. bacon	13. absent	18. supper

Directions: Part B

Say: "Now move your marker up to number 1 under the big letter B." Write on the board the words garrulous pertain warrant. Now this time you are to listen for the last sound in the word. Listen to this word - spoon. Which word on the board has the same last sound as spoon? Yes, the middle one has the same last sound as spoon. So we draw a circle around it like this. Now draw a circle around it on your paper."

"Now move your marker down to number 2. Listen for the last sound in this word - until. Find the word that has the same sound at the end as until. Draw a circle around it.

Directions for the next four words: "Move your marker to number 3. Which word has the same last sound as visit? Draw a circle around it."

3. visit 4. wonder 5. railroad 6. company

On number 7 and following, the child listens for the first and last sounds.

Say: "Now on number 7, you are to listen for both the beginning and ending sounds."

Write on the board the words brethren nobleman burlesque.

"Which of these words has the same beginning and ending sounds as between? (Wait for answers.) "Yes, the first one begins and ends like between.

Directions for the remainder of the words in PART B: "Move your marker to number 8. Find the word that begins and ends like geranium."

9. happen
10. present
11. cabinet
12. famous
13. motor
14. shovel
15. break
16. thicken
17. drink
18. child

Directions: Part C, page 7

Write these letters on the board: ind _ bl _ t ing.

Say: "Now move your marker to number 1 and C. Listen to this word blinding. Draw circles around all of the sounds you hear in blinding." (Teacher circles ind bl ing on the board.) "How many of you circled these sounds?"

Write on the board a m sp f d ng.

Say: "Now find all the sounds you can in this word - sporadic. Which did you circle? Yes, sp a and d. The other sounds are not on your paper." For the rest of the words

Say: "On number 3, circle the letter you hear in this word - starlight."

3. starlight
4. continuous
5. fortunate
6. twinflower
7. exemplify
8. indenture
9. envelopment
10. elocutionist
11. benevolent
12. unqualified

Test IV - Writing Letters Dictated

Say: "Find the number 1. Put your marker under it." (Demonstrate) "Let's see how many letters you can write. On the line beside number 1, write the letter 'F'. (Pause for five seconds.) Move your marker down under the next line."

"On this line write the letter ' '. (Pause) Move your marker down." For the letter 'E' direct the children to move their markers to the first number in the next column. For the letter 'O' help them to find the top of the last column

The letters are to be dictated in the following order:

1	2	3	4	5	6	7	8	9	10	11	12	13
F	K	Q	R	L	P	H	G	M	E	X	T	Y

14	15	16	17	18	19	20	21	22	23	24	25	26
N	C	J	D	I	O	B	A	W	S	U	Z	V

(Note: Capital or lower case, cursive or manuscript letters will be accepted.)

B. U. INDIVIDUAL TEST

Naming Capitals and lower case letters

At the beginning the examiner says: "I want to know how many of these letter names you know". Point to each letter, capital and lower case. Put a check mark above any incorrect response.

Sounds of letters and blends

At the beginning of the test the examiner says: "Now let's see how many sounds you know."

Point to each letter and blend. Put a check mark above any incorrect response.

Applied Phonics

At the start of the test the examiner points to the sample item on the child's paper. Then he says, pointing to Dick

Say: "Here is a word you know." Point to tick and

Say: "This word sounds like Dick at the end. The first letter is different. Can you tell me this word?" If necessary say it begins with 't'. Be sure that the children understand the plan.

Say: "Let's see if you can read more new words by changing the first letter. I'll read the ones you know and you read the new ones. The first letter is different in each new word."

Stop after five consecutive errors.

Say: "Now let's see if you can change the last sound in the word." Point to and and

Say: "This word sounds like and at the beginning, the last letter is different. Can you tell me this word?" Continue with the remaining items.

Reading Test

The examiner reads part of the story which is on the examiner's copy and instructs the child when it is his turn to read. The test is stopped only after the examiner is sure that the child could not recognize or analyze the words or until the child has missed a consecutive number of words.

BOSTON UNIVERSITY

FIRST GRADE SUCCESS STUDY--JANUARY TEST

Name_____ Boy_____ Girl_____

Teacher_____

School_____

City_____

			Score
Test	I A	Identifying Lower Case Shown	_____
	B	Identifying Words Shown	_____
Test	II A	Identifying Capitals Named	_____
	B	Identifying Lower Case Named	_____
Test	III	Hearing Sounds in Words	_____
Test	IV	Writing Letters Dictated	_____

TEST IIB Identifying Letters Named, Lower Case

1.	o	s	y	b	m	14.	d	b	g	p	q
2.	r	a	f	m	e	15.	g	b	d	q	p
3.	s	m	o	x	z	16.	b	d	p	q	g
4.	g	p	q	h	y	17.	q	p	d	g	b
5.	k	t	f	l	h	18.	r	m	n	u	o
6.	k	l	h	f	t	19.	o	a	e	g	c
7.	m	f	s	z	c	20.	h	f	l	t	k
8.	l	t	b	k	h	21.	t	e	j	l	i
9.	o	a	e	c	g	22.	g	q	y	j	t
10.	a	r	e	o	c	23.	m	n	u	d	b
11.	n	u	w	r	m	24.	u	n	v	w	m
12.	k	i	g	t	y	25.	c	d	a	e	o
13.	m	v	u	c	h	26.	w	y	v	n	u

Score_____

TEST III Hearing Sounds in Words

A					B		
1. p	b	t	n	a	1. garrulous	pertain	warrant
2. e	p	c	d	t	2. milligram	sweltering	shrapnel
3. d	f	g	v	h	3. chemist	stereogram	hydrocarbon
4. g	k	v	l	i	4. ponderous	spectacular	military
5. k	r	b	d	s	5. finesse	intended	rebuff
6. o	s	n	b	t	6. linoleum	periwinkle	cacaphony
7. y	l	d	f	g	7. brethren	noblemen	burlesque
8. f	t	j	r	b	8. premium	gypsyism	glaucoma
9. c	d	k	m	i	9. hexameter	generation	hydrogen
10. f	v	p	h	o	10. proficient	presumptive	dominant
11. l	v	n	t	u	11. cavalry	martinet	castinet
12. s	q	r	z	p	12. filiform	felonious	deciduous
13. c	m	a	b	o	13. meander	monotony	rancour
14. h	m	s	e	w	14. sheathing	shameful	collateral
15. m	v	e	r	a	15. bronchitis	platonic	breechblock
16. n	e	h	a	o	16. theorem	reckon	thermion
17. w	q	j	n	e	17. drammock	druidism	pyrogenic
18. j	l	s	t	y	18. eroded	chiseled	charbon

TEST IB (Continued)

45		par	park		53		form	reform	
	party	part	dark			uniform	inform	deform	
46		quiver	quiz		54		curtain	certain	
	quote	quoit	quire			sustain	retain	maintain	
47		dinner	differ		55		shrub	shrink	
	diffuse	digress	diction			shovel	shriek	shorten	
48		sure	scare		56		convent	convict	
	secure	server	cure			contain	contact	conduct	
49		above	advance		57		scare	server	
	advise	advances	advice			second	secure	sure	
50		different	dinner		58		problem	portable	
	difference	deferent	differ			probably	possible	probable	
51		mentioned	mountain		59		regular	regulation	
	mention	motion	mountains			radiation	regulate	registration	
52		wealth	wealthier		60		meditate	mediate	
	whither	weather	whether			mediates	material	mistake	

Score_____

TEST IIA Identifying Letters Named, Capitals

1.	E	F	A	Y	L	14.	D	C	G	T	B
2.	H	C	D	O	T	15.	O	D	C	Y	G
3.	F	J	X	R	Z	16.	B	L	H	V	L
4.	I	H	E	L	F	17.	N	O	M	K	E
5.	B	E	R	F	A	18.	U	P	J	X	L
6.	N	I	Z	B	L	19.	A	Y	C	T	V
7.	U	B	O	F	P	20.	L	W	F	N	M
8.	E	N	S	O	C	21.	M	T	W	E	F
9.	F	I	J	Y	L	22.	B	L	V	T	K
10.	B	R	X	E	P	23.	Z	G	N	K	F
11.	U	S	O	Z	C	24.	Y	K	T	L	V
12.	W	P	F	V	T	25.	J	M	U	G	N
13.	B	P	S	C	D	26.	T	X	C	Q	G

Score_____

TEST IA Identifying Lower Case Shown

1	m	b	o	s	y
2	e	a	r	m	f
3	v	m	h	u	c
4	g	i	k	t	y
5	v	w	u	m	n
6	c	e	o	a	r
7	e	o	c	g	a
8	t	l	h	b	k
9	s	c	z	m	f
10	h	k	l	t	f
11	h	k	t	f	l
12	g	p	y	q	h
13	s	x	o	m	z
14	w	u	v	y	n
15	c	o	a	e	d
16	w	u	n	m	v
17	m	b	n	d	u
18	g	y	j	i	q
19	e	i	j	l	t
20	f	t	h	k	l
21	o	a	e	c	g
22	r	o	n	m	u
23	p	d	b	q	g
24	g	b	p	q	d
25	p	g	b	d	q
26	d	p	g	q	b

Score _____

TEST IB Identifying Words Shown

27	at	ball		36	nose	ice	
	ill	all	fall		mice	race	nice
28	no	in		37	speak	speck	
	nip	on	imp		stick	spice	peck
29	play	day		32	drip	prop	
	boy	dog	boys		drops	rap	drop
30	me	men		39	jump	jest	
	name	man	run		just	jot	must
31	saw	war		40	alone	abuse	
	as	was	waste		absent	abide	along
32	tis	sit		41	clasp	class	
	sat	it	site		clear	clean	cleat
33	dark	lack		42	would	word	
	clock	black	block		world	whirl	wound
34	barn	bun		43	fondle	foolish	
	burn	bar	done		forage	forget	forbid
35	frost	first		44	terrace	terrier	
	fast	firm	trust		terrific	tremble	testify

7.

C

1.	ind	r	bl	x	t	ing	7.	tion	ex	pl	f	h	an
2.	a	m	sp	f	d	ng	8.	ure	g	d	sm	k	in
3.	ar	k	st	w	ight	p	9.	op	r	en	a	l	v
4.	ous	b	sh	th	f	con	10.	o	b	sp	el	er	ist
5.	n	ck	for	cl	w	ate	11.	ent	a	be	c	n	v
6.	in	ep	ow	tw	a	fl	12.	d	un	gr	b	qu	l

Score _____

Test IV. Letters Dictated

1. _____	10. _____	19. _____
2. _____	11. _____	20. _____
3. _____	12. _____	21. _____
4. _____	13. _____	22. _____
5. _____	14. _____	23. _____
6. _____	15. _____	24. _____
7. _____	16. _____	25. _____
8. _____	17. _____	26. _____
9. _____	18. _____	

Score _____

Name _____ Nn Nk Wd Wm Teacher _____

1.

O X A B T C L R I S P N F E H D M K Z J Y W G Q U V ____

o x s c i p t m k z e w r j y f n a h v u b d l g q ____

2.

s t f p m z k o b c h j n r d w g a e l v i u y ____

st ch th wh sh dr tr cl fr sm pl tw fl sk sw gr ____

3.

Dick - tick

house - mouse	car - jar	Puff - huff
jump - pump	boat - goat	make - lake
funny - sunny	not - dot	big - rig
ball - tall	find - kind	for - nor
yellow - fellow	see - bee	can - van
	look - cook	red - wed

____

---

and - ant

big - bid	in - if
red - rep	work - worm
Tim - tis	not - nor
run - rut	can - cab

____

****

3.

(This is the last story.)

Peter and Patty wanted to buy a surprise for their parent's wedding anniversary. They decided to earn some money. "Let's make a list of the things we could do," said Peter. Here is their list:

Child:

feed animals, wash and dry dishes, empty garbage, dust livingroom, hang laundry on clothesline, haul bundles from store in wagon, pull weeds and sprinkle garden, mow lawn and rake grass

____

1.

(I have a story for us to read together. I'll read parts of it and then I'll tell you when to read.)

One rainy day Dick, Jane, and Sally had to stay inside.

Child:
" I want to play something," said Sally. " We can work and make a house. Jane you be mother, Dick-father, Tim-Jane, and Spot-Dick. Puff can be my little baby. Where is he? Help me find him."

The children looked everywhere. Dick looked in the toy box and said:

Child:
" Come! See the big blue ball, one yellow boat, two cookies, three red cars. But Puff is not in here."

As Jane walked by the dollhouse, she saw Puff sleeping there. She called to Dick and Sally:

Child:
" Oh go look. It is funny! "

The children looked at Puff sleeping in the little house and laughed. Puff woke up and saw the children. He didn't like to be laughed at. " Oh," said Dick.

Child:
" See him jump up and down and run away."

2.

(This is a different story.)

Tom had a new tool set and wanted to use it. Since Susan had two dolls and only one doll bed, Tom said he would make her another bed with his new set.

Child:
Tom took a saw out of the tool box. He called, " Susan, please get some wood and a few nails."

Susan ran to a chair in the gameroom where there were a few pieces of wood and some nails. She found Tom's water pistol there too, and a little puddle where the water had leaked out on the seat. She picked up the wood and nails to take them back to Tom.

Child:
She soon came back with them. " That game room seat was wet, so there is rust on these nails. You cannot do good work now. But my toy beds are wide. I guess two dolls will fit on one."

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