

TERLA

TEST OF RECEPTIVE LANGUAGE ABILITY

GARY OWEN BUNCH

ADDENDA

The following data are presented to provide an additional criterion against which to judge performance. The percentages noted are those obtained by Grade One normally hearing, average children at the end of that grade.

CORRECT RESPONSES BY PERCENTAGE TO TERLA ITEMS BY GRADE ONE NORMALLY HEARING CHILDREN

| <u>Singulars</u> | | <u>Plural /s/</u> | | <u>Plural /es/</u> | | <u>Desc. Adjectives</u> | |
|-------------------------|-------|------------------------|-------|--------------------------|-------|----------------------------|-------|
| 1. dog | 100.0 | 30. cars | 92.5 | 38. boxes | 96.3 | 2. big | 100.0 |
| 3. girl | 100.0 | 34. girls | 96.3 | 45. brushes | 100.0 | 4. old | 100.0 |
| 6. dish | 96.3 | 66. boys | 100.0 | 70. glasses | 100.0 | 23. two | 96.3 |
| 9. box | 92.5 | 74. dogs | 100.0 | 76. churches | 100.0 | 42. purple | 85.1 |
| 11. glass | 92.5 | 90. pencils | 100.0 | 86. dishes | 96.3 | 50. small | 100.0 |
| 19. brush | 96.3 | | | | | 53. sad | 88.8 |
| 27. pencil | 96.3 | | | | | 56. five | 96.3 |
| 31. church | 88.8 | | | | | 78. fat | 92.5 |
| 37. boy | 92.5 | | | | | 81. yellow | 92.5 |
| 75. car | 88.8 | | | | | 87. broken | 100.0 |
| <u>Comp. Adjectives</u> | | <u>Sup. Adjectives</u> | | <u>Pronouns</u> | | <u>Prepositions</u> | |
| 25. smaller | 100.0 | 8. happiest | 74.0 | 10. it | 85.1 | 13. on | 96.3 |
| 44. bigger | 100.0 | 40. fattest | 92.5 | 16. they | 77.7 | 14. over | 96.3 |
| 62. older | 88.8 | 47. smallest | 100.0 | 20. we | 85.1 | 43. off | 100.0 |
| 71. fatter | 96.3 | 48. oldest | 88.8 | 24. he | 96.3 | 52. off | 100.0 |
| 84. happier | 88.8 | 61. biggest | 100.0 | 26. them | 85.1 | 55. in front of | 59.2 |
| | | | | 32. him | 100.0 | 64. behind | 62.4 |
| | | | | 33. I | 85.1 | 67. beside | 81.4 |
| | | | | 35. she | 100.0 | 82. on | 100.0 |
| | | | | 51. her | 100.0 | 85. in | 100.0 |
| | | | | 79. us | 81.4 | 89. under | 100.0 |
| <u>Future</u> | | <u>Past</u> | | <u>Pres. Prog. Sing.</u> | | <u>Pres. Prog. Plural.</u> | |
| 5. will eat | 18.5 | 15. ate | 81.4 | 18. is writing | 77.7 | 7. are eating | 77.7 |
| 12. will fall | 7.5 | 17. slept | 22.2 | 39. is sitting | 100.0 | 36. are jumping | 100.0 |
| 22. will jump | 66.6 | 21. jumped | 66.6 | 59. is drawing | 92.5 | 46. are sleeping | 100.0 |
| 41. will throw | 29.6 | 28. fell | 40.7 | 60. is cutting | 96.3 | 54. are drinking | 96.3 |
| 57. will sleep | 44.4 | 29. cut | 37.0 | 80. is throwing | 62.9 | 58. are falling | 96.3 |
| 65. will write | 66.6 | 49. wrote | 92.5 | | | | |
| 68. will cut | 51.8 | 63. drew | 81.4 | | | | |
| 73. will sit | 62.9 | 69. sat | 25.9 | | | | |
| 83. will draw | 62.9 | 72. drank | 74.0 | | | | |
| 88. will drink | 48.1 | 77. threw | 92.5 | | | | |

CORRECT RESPONSES BY PERCENTAGE TO TEXLA ITEMS BY GRADE ONE NORMALLY HEARING CHILDREN

| <u>Plural /s/</u> | | <u>Plural /es/</u> | | <u>Comp. Adjectives</u> | | <u>Sup. Adjectives</u> | |
|-------------------|-------|--------------------|------|-------------------------|------|------------------------|------|
| 1. dogs | 94.1 | 6. dishes | 47.2 | 8. fatter | 35.4 | 9. fattest | 88.5 |
| 3. girls | 100.0 | 10. boxes | 41.3 | 26. bigger | 53.1 | 27. biggest | 82.4 |
| 29. pencils | 88.5 | 12. glasses | 59.0 | 42. happier | 35.4 | 43. happiest | 76.7 |
| 32. cars | 94.1 | 20. brushes | 59.0 | 47. smaller | 59.0 | 48. smallest | 82.4 |
| 39. boys | 88.5 | 33. churches | 41.3 | 51. older | 59.0 | 52. oldest | 82.4 |

| <u>Desc. Adjectives^a</u> | | <u>Pronouns</u> | | <u>Prepositions</u> | | <u>Future</u> | |
|-------------------------------------|-------|-----------------|------|---------------------|-------|----------------|------|
| 2. _____ | 94.1 | 11. This | 94.1 | 14. on | 88.5 | 7. will eat | 35.4 |
| 4. _____ | 100.0 | 17. They | 29.5 | 15. over | 88.8 | 13. will fall | 23.6 |
| 24. _____ | 76.7 | 21. We | 41.3 | 46. off | 94.1 | 23. will jump | 35.4 |
| 45. _____ | 100.0 | 25. He | 41.3 | 56. off | 70.8 | 61. will sleep | 23.6 |
| 54. _____ | 100.0 | 28. them | 88.5 | 59. in front of | 64.9 | 67. will write | 35.4 |
| 57. _____ | 100.0 | 34. him | 59.0 | 66. behind | 100.0 | 70. will cut | 64.9 |
| 60. _____ | 94.1 | 35. I | 94.1 | 69. beside | 82.4 | 74. will sit | 47.2 |
| 79. _____ | 100.0 | 37. She | 35.4 | 83. on | 82.4 | 81. will throw | 53.1 |
| 82. _____ | 100.0 | 55. her | 88.5 | 85. on | 88.5 | 84. will draw | 41.3 |
| 87. _____ | 100.0 | 80. us | 82.4 | 89. under | 100.0 | 88. will drink | 53.1 |

| <u>Past</u> | | <u>Pres. Prog. Sing.</u> | | <u>Pres. Prog. Pl.</u> | |
|-------------|------|--------------------------|----------------|------------------------|-------|
| 16. ate | 41.3 | 19. is writing | 59.0 | 5. are eating | 82.4 |
| 18. slept | 17.7 | 41. is sitting | 59.0 | 38. are jumping | 23.6 |
| 22. jumped | 59.0 | 44. is throwing | 35.4 | 50. are sleeping | 100.0 |
| 30. fell | 64.9 | 63. is drawing | 47.2 | 58. are drinking | 94.1 |
| 31. cut | 70.8 | 64. is cutting | 59.0 | 62. are falling | 76.7 |
| 53. wrote | 29.5 | | | | |
| 65. drew | 53.1 | <u>To Be</u> | <u>To Have</u> | | |
| 71. sat | 53.1 | 36. is | 100.0 | 68. has | 64.9 |
| 73. drank | 59.0 | 40. am | 100.0 | 72. have | 47.2 |
| 78. threw | 41.3 | 49. are | 64.9 | 86. has | 100.0 |
| | | 75. is | 100.0 | 90. have | 76.7 |
| | | 76. am | 100.0 | | |
| | | 77. are | 94.1 | | |

^a While particular adjectives may be suggested by the illustrations, any adjective is acceptable.

Test of Receptive Language Ability

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Appreciation for assistance in preparing the Test of Receptive Language Ability is extended to the staff and students of the Saskatchewan School for the Deaf, Saskatoon, Saskatchewan, of the E. C. Drury Regional Centre for the Hearing Handicapped, Milton, Ontario, of the Halton Board of Education (Ontario) and of the Metropolitan Toronto Separate School Board. Of special note was the assistance of Perry Leslie, Terry Lynn Melnyk, Jim Forde, Norm Stutt, Grace Wesenger, Eileen McCutcheon, Rhonda Vandal, Diana Massey and Betty Smith.

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Second Printing 1984

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PURPOSE

The Test of Receptive Language Ability (TERLA) is designed to assess the child's receptive control of selected basic grammatical principles. It is structured on a simple format which presents a single word or verb phrase simultaneously with a number of illustrations. The child selects that illustration which best represents the printed word or verb phrase. The following grammatical principles are assessed (see Table 1).

Table 1
Grammatical Principles Assessed by TERLA
by Type and Number of Exemplars

| Principle | Number | |
|------------------------------|-----------|------------|
| | Long Form | Short Form |
| Singular nouns | 10 | 6 |
| Plural nouns in /s/ | 5 | 4 |
| Plural nouns in /es/ | 5 | 4 |
| Pronouns | 10 | 6 |
| Descriptive adjectives | 10 | 6 |
| Comparative adjectives | 5 | 4 |
| Superlative adjectives | 5 | 4 |
| Prepositions | 10 | 6 |
| Past tense | 10 | 6 |
| Future tense | 10 | 6 |
| Present progressive singular | 5 | 3 |
| Present progressive plural | 5 | 3 |

The TERLA assesses the child's receptive control of these principles in four ways. It is a norm-referenced test and provides a means of comparing an individual's total score with the total scores of hearing-impaired children of the same age. Secondly it provides a principle-by-principle comparison with hearing-impaired children of the same age. Thirdly and fourthly, it is a criterion-

referenced test and provides a total score and principle-by-principle score of number of items correct, against number of exemplars presented. The test administrator is able to investigate individual patterns of mastery of the principles investigated. A fifth comparison is available. A small sample of grade one normally hearing children was tested to obtain data regarding whether or not non-hearing impaired children could respond to the items. The scores of hearing impaired youngsters of various ages may be compared to the scores of normally hearing children who have been exposed to reading to the end of grade one. All children in the grade one sample had attended kindergarten. None had attended educational preschool programmes.

The most important information available from the TERLA is the pattern of responses made by individual children to items falling under one principle or related principles. Basic to the test design is the concept that if the teacher or other test administrator detects a pattern of response, one of three important diagnostic assumptions can be made.

1. the child has receptive control of the principle and appears to understand the grammatical concept in question
or
2. the child does not have receptive control of the principle and responds in a random fashion indicating lack of understanding of the grammatical concept in question
or
3. the child does not have receptive control of the principle but responds in a fashion which suggests the presence of a deviant rule for situations involving that principle

It is important that the person employing the TERLA clearly understands how the term "grammatical concept" is used here. On one level the test indicates the child's ability to respond to individual items. Can the child recognize certain plural forms or recognize the use of an appropriate preposition? On another and deeper level the test probes the child's basic ability to recognize when a certain grammatical principle should be used. Does a particular word or phrase call for a past tense response as against a future or present progressive response? Does another word or phrase call for use of a plural as against a singular response? It is the attempt to probe the child's understanding of when to use certain principles that is paramount. In this way the test may be considered to delve beneath

surface ability in an attempt to tap the general rules the child is following.

If situation one above holds, the teacher has definite positive information regarding one principle and does not need to teach or re-teach that principle. Teaching becomes more efficient in that time is not wasted teaching that already known.

If situation two holds, the teacher knows that the child does not realize that the occurrence of a particular situation calls for the application of a particular rule. The child does not have receptive control. More exposure to the principle on a receptive level is required. It is axiomatic that one does not expect expressive use of a principle prior to some receptive mastery of that principle.

If situation three holds, the teacher knows that the child has formed a rule for use when a particular grammatical situation occurs and that that rule is deviant. Knowing this, the teacher is better equipped to battle against the incorrect usage and teach the correct.

TEST DESIGN

The TERLA includes 90 items. Each item consists of three illustrations accompanied by a single printed word or verb phrase. The only exceptions are for items testing the comparative where two illustrations are presented.

The words used in the test were selected from first grade vocabulary lists of a number of schools for the hearing impaired. Once a master list of words was chosen, it was presented to a panel of experienced teachers of primary-age, hearing impaired children. The 60 words finally selected were nominated by all judges as being among the earliest exposed in print to hearing impaired children. The vocabulary includes the following words:

Nouns: dog, girl, dish, box, glass, brush, pencil, car, church,
children, boy

Pronouns: it, he, she, I, they, we, him, her, them, us

Adjectives: big, small, old, young, happy, sad, fat, thin, surprised,
broken, blue, green, purple, orange, yellow, one, two,
three, four, five

Prepositions: behind, beside, on, in, over, under, in front of, off

Verbs: eat, fall, sleep, write, jump, cut, sit, throw, drink,
draw

Negative: not

Test administrators may wish to ascertain that all words in the test are known by the testee. If specific words are not known, those items may be deleted and the TERLA employed as a criterion-referenced, diagnostic test only. Conversely the unknown words may be taught in advance of the test. Care must be taken not to teach the words in the same format as the test.

In the same way test administrators may wish to delete certain grammatical principles for younger children. However, the majority of words and principles are among those to which hearing impaired children are exposed at an early stage of their school life.

Short Test Version

A short version of the TERLA has been designed. It includes a total of fifty-eight items. All statistical data available for TERLA is available for the TERLA SHORT as well. TERLA SHORT items are noted by an asterisk on the record form (see Appendix A). A minor time saving is available if the TERLA SHORT is used.

Communication Method

All communication philosophies allow for the use of reading, speech, speech-reading and natural gestures. The TERLA relies on no other receptive or expressive communication skills. It may be employed with children taught under any communication philosophy. Test administrators need have no familiarity with manual systems used with the hearing-impaired.

The essential receptive skills for the child are those of reading and understanding simple pointing instructions. The test administrator provides minimal accompanying oral instructions. The only expressive skill required of the child is the ability to point to one of the illustrations. No subject in the standardization sample failed to understand the test instructions.

ADMINISTRATION

Qualifications of the Administrator

The TERLA was developed for use by classroom teachers who wish specific information regarding the receptive language abilities of their children. It is not necessary that the teacher be a trained teacher of hearing impaired children. It may be used also by a wide range of personnel seeking norm-referenced and/or criterion-referenced diagnostic information. The administrator must be familiar with the material of the TERLA but extensive training in test administration is not necessary. Interpreting test results for individual children does require knowledge of language development in young children and children with deviant language development. Professionals with a solid background in language development and language instruction will be best able to utilize the information gained from this test.

New administrators should practice with the test on children not exhibiting language problems. Extensive practice is not necessary. There is a need, however, to familiarize oneself with the methods for item presentation and scoring.

Administration Procedures

The TERLA is designed for individual administration. A quiet area with no visual distraction should be chosen. It is necessary that the test administrator ensure that the child is in a mood to begin the test. Obviously upset, tired, excited or otherwise inattentive children should not be tested.

Children should be seated directly across a table from the administrator. The stimuli should be presented directly in front of the child. The record form should be directly in front of the test administrator and not in a position where it will distract the child. The test administrator should turn the pages.

The following standardized procedure is to be used.

- a. Present item one.
- b. Point to the word "dog" and then to the first illustration on the examiner's right.
- c. Point to "dog" again and then to the next illustration.
- d. Point to "dog" again and then to the final illustration.
- e. After the final illustration, have the child look at you and say "Which picture is dog?"

- f. Record the subject's response by circling the appropriate item on the record form. The form is designed so that items are directly opposite the corresponding stimulus items. The correct item is underlined.
- g. If subject does not respond or responds incorrectly, point to the word "dog" and then to the correct illustration.
- h. Repeat steps a. through f.
- i. Present item two and repeat steps a. through f.
- j. Present item three and repeat steps a. through f.
- k. If subject is not responding voluntarily by item three, discontinue.
Note that any voluntary response, not necessarily a correct one, is required to continue.
- l. Continue for items four through ninety.

Administration of all ninety items takes ten to fifteen minutes.

TERLA Short Administration

Items included in the short form of the TERLA are indicated by an asterisk beside the item number on the record form and on the stimulus items. General administration procedures remain the same as for the TERLA. The test administrator should turn the pages to present only TERLA SHORT items.

Scoring

All items correct receive a score of one. Incorrect items are scored zero. The maximum total score for the TERLA is ninety and for the TERLA SHORT is fifty-eight.

Sub-scores may be obtained for individual principles.

A check-mark (✓) for correct items or a cross (X) for incorrect items should be made in the appropriate column opposite the three printed illustration descriptions. Each item is identified by the principle being tested to facilitate diagnosis. To the right of each item is a space for diagnostic comments. Observations should be recorded immediately.

STANDARDIZATION

Early Pilot Test

A pilot version of the Test of Receptive Language Ability (TERLA) was developed in 1975. It was administered to thirty-five hearing impaired children, aged 6-11 to 11-8. The subjects were drawn from a residential school for the deaf. All had better ear losses of at least eighty-two decibels.

Encouraging diagnostic findings were noted. Patterns of receptive functioning were apparent as was a general improvement from age to age. Problems with various items were noted and revisions made.

Present Test

The TERLA has been normed on a total of ninety-two hearing impaired children aged six to twelve. Subjects were drawn from two major Canadian residential schools for the hearing impaired. No children with additional handicaps were included in the sample. All subjects were prelingually hearing impaired (See table 2 for losses). As residential schools accept all hearing impaired children within their areas and as these areas contained no other major educational programmes for the hearing impaired the sample may be considered randomly representative of socio-economic classes and urban and rural areas.

Table 2
TERLA Subjects Classified¹ by Degree
of Hearing Loss

| Number of Subjects | Moderate 36-55 dB | Moderately Severe 36-70 dB | Severe 71-90 dB | Profound 91 plus |
|-----------------------|----------------------|----------------------------------|--------------------|---------------------|
| 92 | 3 | 2 | 24 | 63 |

¹ Jaffe, B.F., 1977

The TERLA was also administered to twenty-seven normally hearing grade one children. The purposes of this testing were:

1. to determine how well normally hearing children with minimal reading ability score. The scores of hearing impaired children take on additional meaning when compared to those of normally hearing children.
2. to pinpoint more difficult items for diagnostic comparison
3. to obtain reliability data

The normally hearing children attended an elementary school in a middle class district of a major Canadian centre. All children in the class were tested. Curricula as laid down by the Ontario Ministry of Education were followed in the class. Teaching of reading was based on a combination of language experience and basal readers. The class was considered one of average ability as indicated through achievement testing.

Principle by principle performance of hearing impaired and normally hearing subjects is provided in Appendix B, tables 7, 8 and 9. Means and standard deviations for the TERLA and the TERLA SHORT are provided in tables 3 and 4.

Table 3
Means and Standard Deviations for Normally Hearing
and Hearing Impaired Subjects on the TERLA

| Subjects | n | mean score | Standard Deviation |
|-------------------|----|------------|--------------------|
| Hearing Grade One | 27 | 75.52 | 6.38 |
| H.I. 7 years | 14 | 50.43 | 9.24 |
| H.I. 8 years | 16 | 69.81 | 9.49 |
| H.I. 9 years | 20 | 72.55 | 10.93 |
| H.I. 10 years | 16 | 77.81 | 8.19 |
| H.I. 11 years | 14 | 78.00 | 8.01 |
| H.I. 12 years | 11 | 80.55 | 6.49 |

Table 4
Means and Standard Deviations for Normally Hearing
and Hearing Impaired Subjects on the TERLA SHORT

| Subjects | n | mean score | Standard Deviation |
|-------------------|----|------------|-----------------------|
| Hearing Grade One | 27 | 50.59 | 4.34 |
| H.I. 7 years | 14 | 33.57 | 7.19 |
| H.I. 8 years | 16 | 47.31 | 5.90 |
| H.I. 9 years | 20 | 47.50 | 6.77 |
| H.I. 10 years | 16 | 51.31 | 5.03 |
| H.I. 11 years | 14 | 50.79 | 4.66 |
| H.I. 12 years | 11 | 52.09 | 3.78 |

Reliability

Internal consistency reliability data are available for all ninety-one hearing impaired subjects tested on the TERLA and TERLA SHORT. The reliability coefficients of .96 and .92 respectively indicate adequate levels of internal consistency. Reliability coefficients for each principle assessed are provided in table 5.

Internal consistency reliability coefficients of .84 and .85 were found for the TERLA and TERLA SHORT for the Grade One normally hearing group. These coefficients are based on sixty-three and thirty-four items respectively due to zero variance in other items.

Table 5
Internal Consistency Reliability Coefficients¹ for
TERLA and TERLA SHORT Sub-tests

| Principle | TERLA | TERLA SHORT |
|------------------------------|-------|-------------|
| Singular nouns | .83 | .65 |
| Plural nouns in /s/ | .88 | .66 |
| Plural nouns in /es/ | .92 | .86 |
| Pronouns | .74 | .53 |
| Descriptive adjectives | .77 | .73 |
| Comparative adjectives | .54 | .62 |
| Superlative adjectives | .56 | .46 |
| Prepositions | .80 | .74 |
| Past tense | .77 | .69 |
| Future tense | .86 | .86 |
| Present progressive singular | .66 | .61 |
| Present progressive plural | .54 | .16 |

¹ Spearman-Brown Equal Length Correlation Coefficient

Validity

Validity is a statement of whether a test assesses that which it was designed to assess, if it accomplishes the purpose for which it was intended.

Content Validity

The TERLA is designed to assess the individual's ability to interpret accurately the meaning of words or phrases related to certain basic grammatical principles and, thereby, indicate understanding of the concepts involved. The principles surveyed in this test were drawn from those taught to severely and profoundly hearing impaired children in the early grades. These principles are considered fundamental to the ability to begin to understand language through reading.

A panel of experienced teachers of the hearing impaired examined the principles employed here. There was unanimous agreement that all principles were used with hearing impaired children on a receptive basis within the first two years of

primary school.

As noted earlier, all vocabulary employed in the TERLA was reviewed by the panel of teachers. The words included in the test were considered to be among those to which severely and profoundly hearing impaired children are exposed soon after school entry.

Concurrent Validity

Validity may be assessed by comparison of subject scores on the test in question to scores on a criterion measure. Unfortunately, there are few tests which are suitable to employ as criterion measures when designing a language test for the hearing impaired. It would do little good to use a criterion measure which, itself, had suspect validity.

The Peabody Picture Vocabulary Test (PPVT) is used widely with the hearing impaired. Norms for the hearing impaired have been published (Forde, 1977).

Forms A and B of the PPVT were the criterion measures in a concurrent validity study involving thirty-one hearing impaired children 11-5 to 13-11 years. The coefficient between the TERLA and Form A of the PPVT was .67 and between the TERLA and Form B of the PPVT was .71.

Concurrent validity correlations for the TERLA, TERLA SHORT, the Test of Expressive Language Ability (TEXLA) and the TEXLA SHORT were obtained for hearing impaired and normally hearing subjects. The high levels of relationship found indicate that the tests, both long and short forms, test closely associated abilities (see table 6).

Table 6
Concurrent Validity Correlation Coefficients for
Long and Short Forms of TERLA and TEXLA for
Hearing Impaired and Normally Hearing Subjects

| Tests | Hearing | Hearing Impaired |
|-------------------|---------|------------------|
| TERLA/TERLA SHORT | .95 | .98 |
| TERLA/TEXLA | .52 | .89 |
| TERLA/TEXLA SHORT | .56 | .90 |
| TEXLA/TEXLA SHORT | .99 | .99 |

Language is developmental in nature. No matter whether one holds the view that internalization of language is simply delayed in many hearing impaired children or that many depend on memorization rather than internalization, there should exist improvement in language with age. A validly constructed test reflects improvement in performance with age. The TERLA and TERLA SHORT do show such improvement overall beyond the .0001 level for hearing impaired subjects (see tables 10 and 11, Appendix B). Sources of variation are given in Appendix B.

Another method of determining validity is to be able to classify children on the basis of performance. The norming population of average hearing impaired children was compared to two groups, one of integrated hearing impaired children considered language capable and one of hearing impaired children considered to have additional language problems. Clear differences were apparent between children in the norming population and the other two groups.

Eight children aged seven to twelve formed the language capable group with each age group represented. All scored at least one standard deviation above the mean for their age group. None were placed lower than the eighty-second percentile and only one of the eight obtained a stanine score of less than eight.

Eight children aged seven to ten formed the language problem group. All scored below average for their age group with six more than one standard deviation below the mean. Percentile ranks and stanines by age were 23 and 3 (7 years), below 5 and 1 (8 years), 41 and 4 (8 years), below 5 and 1 (8 years), below 5 and 1 (eight years), 18 and 4 (9 years), 23 and 5 (10 years) and below 5 and 1 (10 years).

INTERPRETATION

The Test of Receptive Language Ability (TERLA) provides information on a number of levels.

- comparison of total and subtest scores to those of normally hearing grade one children
- comparison of total and subtest scores to those of hearing impaired age peers
- comparison of total and subtest scores to those of other hearing impaired subjects
- diagnosis of correct and incorrect receptive rule patterns
- comparison of receptive abilities with expressive abilities

Mean Scores

Mean Scores for total performance on the TERLA and TERLA SHORT for normally hearing and hearing impaired subjects are given in tables 3 and 4. Mean scores for each principle for age categories of hearing impaired children and for normally hearing children are provided in tables 7 to 9 in Appendix B. Scores of individual children may be compared to the various mean scores available to evaluate individual performance against normally hearing grade one children and hearing impaired children of various ages.

Percentile Ranks

Individual scores may be compared in relative standing to subjects in the standardization sample through the use of percentile ranks. Tables 12 through 17 show the percentile ranks by age for hearing impaired subjects for various raw scores (see Appendix C).

Standard Scores

An additional method of judging a child's relative standing in comparison with peers is to employ standard scores. Tables 12 through 16 provide stanine scores by age for hearing impaired subjects in the standardization sample (see Appendix C).

Educational Diagnosis

The latter two levels yield the most significant diagnostic information and are of most interest to the classroom teacher, resource teacher and consultant. It is from these areas that the most useful educational information is available.

The TERLA provides information of a general nature and of a specific nature. It is at the subtest level that these take on the greatest focus and educational meaning. At the general level the test reveals whether or not a subject has receptive control of specific grammatical principles. Does he realize that the addition of an /s/ to a noun creates a plural? Does he realize that altering a verb in a certain manner creates a past tense meaning?

At the specific level the test reveals responses to individual instances of a given grammatical principle. Examination of a series of responses to instances of a given principle indicates whether a subject reacts in a consistent manner when faced with a particular type of situation. The following examples provide interpretations of the responses of two subjects.

Child A

Child A shows two general areas of marked difficulty and a number of areas of lesser difficulty. The first and most significant area involves the three verb tenses investigated. In almost every possible past tense item and in half of the future tense items, Child A selected the picture commonly considered illustrative of the present progressive tense. Given this tendency, it is not surprising that A scored well on actual present progressive items. However, he does not appear able to distinguish past and future situations from present on a receptive level. It is interesting to note that the three correct future tense and one correct past tense items were the last of those types presented. It appears almost as if the knowledge were there but not automatically retrievable. Certainly A must be exposed to many more opportunities to experience past and future tense situations on a receptive basis before being expected to use them expressively. He must learn that different forms of the same verb call for different interpretations of the time of the action.

Pronouns also cause considerable difficulty. Correct responses were made to singular and plural items in the pronoun forms routinely found in the subject

| Principle | Score | | Comments |
|------------------------------------|------------|------------|---|
| | Long | Short | |
| Singular | 10/10 | 6/10 | OK |
| Plural /s/ /es/ | 4/5 4/5 | 3/4 3/4 | -- chose singular form twice |
| Pronouns | 6/10 | 3/6 | -- fine on subject but poor with object forms -- difficulty with number |
| Descriptive Adjectives | 10/10 | 6/6 | OK |
| Comparative Adjectives | 3/5 | 2/4 | -- chose positive form twice |
| Superlative Adjectives | 4/5 | 3/4 | -- chose positive form once |
| Prepositions | 8/10 | 5/6 | -- chose "over" illustration for "behind" -- chose "off" illustration for "on" |
| Past Tense | 1/10 | 0/6 | -- future once -- present progressive eight times |
| Future Tense | 3/10 | 3/6 | -- present progressive five times -- past twice |
| Present Progressive Singular | 4/5 | 3/3 | -- chose "threw" illustration -- pattern of nearly always choosing present progressive illustration throws this apparent good level into question |
| Present Progressive Plural | 5/5 | 3/3 | |

of a sentence. Incorrect responses were made for singular and plural forms routinely found in the object position. In every case the wrong number was chosen indicating lack of complete understanding of that concept. Whenever possible a pronoun form usually associated with the subject was selected. The teacher would be safe to assume receptive control of singular and plural pronouns in the subjective case with a need for continued exposure to pronoun forms used objectively prior to use of these forms expressively.

Minor areas involve plural noun forms, comparative and superlative adjectives and prepositions. While basic receptive control of these principles is apparent, individual items cause difficulty. These individual items should be taught directly and Child A should be expected to begin to use these principles expressively though much receptive opportunity still should be provided.

Child B

This older child shows considerable receptive strength. One major area of difficulty is apparent as are a number of lesser ones. As with Child A, Child B chooses the present progressive form for many future tense instances. No pattern of a series of incorrect items followed by final correct items emerges. B appears to select answers randomly suggesting some familiarity with the future tense but basic dependence on the more familiar present progressive. The teacher might expect expressive use of the past tense with some need to clarify use of the present progressive and future.

A secondary problem exists with regard to comparison of adjectives. Child B did not interpret the printed form consistently and at times chose the positive form of the adjective rather than the comparative or superlative. One would expect that attempts to use these forms expressively would not be successful. Continued receptive level instruction is necessary.

General Discussion

The child in the first example exhibits two broad areas of receptive difficulty. She shows no consistent knowledge of pronouns. Her lack of understanding is emphasized by the fact that she does not appear to realize that certain pronouns are singular while others are plural. The second broad difficulty centres on verb forms. In almost all cases the child selected the illustration showing a

| Principle | Score | | Comments |
|------------------------------|-------|-------|---------------------------------------|
| | Long | Short | |
| Singular | 10/10 | 6/6 | OK |
| Plural /s/ | 5/5 | 4/4 | OK |
| /es/ | 5/5 | 4/4 | |
| Pronouns | 9/10 | 5/6 | OK |
| Descriptive Adjectives | 10/10 | 6/6 | OK |
| Comparative Adjectives | 3/5 | 2/4 | -- chose positive twice |
| Superlative Adjectives | 4/5 | 4/4 | -- chose positive once |
| Prepositions | 9/10 | 6/6 | -- chose "on" for "in front of" |
| Past Tense | 9/10 | 6/6 | -- present progressive once |
| Future Tense | 5/10 | 3/6 | -- present progressive in 5 instances |
| Present Progressive Singular | 4/5 | 3/3 | -- future once |
| Present Progressive Plural | 4/5 | 3/3 | -- future once |

present progressive situation. She did not have the idea that the way the verb form is written determines the choice of illustration. Her "correct" present progressive responses are questionable since all verb forms call forth a stock response. In addition to these two general problems two specific problems are apparent. These have to do with the superlative form of adjectives and certain prepositions.

The child in the second example shows a quite different pattern. She has no areas indicative of general lack of understanding. She exhibits a pattern of responses which suggests that she partially understands how most of the grammatical principles examined operate. She chose a plural /es/ illustration three of five times when shown a singular noun. However, she responded correctly when required to demonstrate knowledge of the meaning of the /es/ ending in plural situations. With pronouns she demonstrated confusion in number. She chose a singular illustration for the plural pronouns "we" and "us" and a plural illustration for the singular pronoun "him". As with the child in the first example some uncertainty was shown with the superlative adjective form and with specific prepositions. Some control of the past, future and present progressive tenses is apparent. However, this control is by no means complete. There is a tendency to select a past tense illustration frequently when shown a future or present progressive tense verb form. This pattern calls into question whether any verb form is understood with consistency.

Teaching Decisions

Information such as the preceding leads directly to teaching decisions. These decisions are both general and specific as are the diagnostic findings. Certain tenets must be accepted. These lead to general teaching practices.

1. If a subject demonstrates receptive control of a principle, the teacher may expect the subject to attempt expression of that principle.
2. If a subject does not demonstrate receptive control of a principle, more receptive practice is required and it is inappropriate to expect expression of the principle.

APPENDIX A

3. Evidence of confusion among principles calls for teaching directed to clarification of the principles concerned. Receptive accuracy must be obtained before expressive practice is attempted.

In some cases it is apparent that the subject understands the principle in question but that he has imperfect understanding of certain examples. The teacher may isolate these instances and teach or re-teach to clarify use of specific words or phrases. Specific teaching practices should be brought to bear to meet specific needs as revealed by the TERLA.

Comparison to Receptive Abilities

Receptive scores should be compared to expressive scores on the same principles. When this is done the diagnostician has much more information on which to base teaching decisions. Comparative expressive information is available through administration of the Test of Expressive Language Ability (TEXLA).

REFERENCES

- Forde, J. Data on the Peabody Picture Vocabulary test. American Annals of the Deaf, 1977, 124, 38-43.
- Jaffe, B.F. Hearing loss in children. Baltimore: University Park Press, 1977.

| No. | Response | | | Principle | X | No. | Response | | | Principle | X |
|-----|-------------------|--------------------|--------------------|------------|---|-----|--------------------|--------------------|---------------------|------------|---|
| 1* | dogs | dogs | <u>dog</u> | sing. | | 46 | slept | will sleep | <u>are sleeping</u> | p.p.pl. | |
| 2* | <u>big</u> | small | small | adj. | | 47* | smaller | small | <u>smallest</u> | superla. | |
| 3* | <u>girl</u> | girls | girls | sing. | | 48* | <u>oldest</u> | old | older | superla. | |
| 4* | <u>old</u> | young | young | adj. | | 49* | <u>wrote</u> | is writing | will write | past | |
| 5 | <u>are eating</u> | ate | <u>will eat</u> | future | X | 50* | big | big | <u>small</u> | adj. | |
| 6* | <u>dish</u> | dishes | dishes | sing. | | 51 | <u>her</u> | they | it | pronoun | |
| 7 | ate | will eat | <u>are eating</u> | p.p.pl. | | 52* | over | on | <u>off</u> | prep. | |
| 8 | happier | <u>happy</u> | <u>happiest</u> | superla. | X | 53 | sad | surprised | <u>happy</u> | adj. | |
| 9* | boxes | <u>box</u> | boxes | sing. | | 54* | drank | will drink | <u>are drinking</u> | p.p.pl. | |
| 10* | they | <u>it</u> | <u>they</u> | pronoun | X | 55 | <u>in front of</u> | <u>over</u> | under | prep. | X |
| 11 | glasses | glasses | <u>glass</u> | sing. | | 56 | two | four | <u>five</u> | adj. | |
| 12 | <u>will fall</u> | <u>are falling</u> | fell | future | X | 57 | are sleeping | <u>will sleep</u> | slept | future | |
| 13 | behind | beside | <u>on</u> | prep. | | 58 | fell | <u>are falling</u> | will fall | p.p.pl. | |
| 14* | in front of | behind | <u>over</u> | prep. | | 59* | will draw | drew | <u>is drawing</u> | p.p.sing. | |
| 15 | <u>ate</u> | are eating | will eat | past | | 60* | cut | will cut | <u>is cutting</u> | p.p. sing. | |
| 16 | it | <u>they</u> | he | pronoun | | 61* | big | bigger | <u>biggest</u> | superla. | |
| 17 | <u>slept</u> | are sleeping | will sleep | past | | 62* | <u>old</u> | <u>older</u> | | compar. | X |
| 18* | <u>is writing</u> | will write | wrote | p.p. sing. | | 63* | will draw | is drawing | <u>drew</u> | past | |
| 19* | <u>brush</u> | brushes | brushes | sing. | | 64 | <u>behind</u> | in | beside | prep. | |
| 20* | <u>we</u> | it | she | pronoun | | 65* | <u>is writing</u> | wrote | <u>will write</u> | future | X |
| 21* | are jumping | <u>jumped</u> | will jump | past | | 66* | <u>boys</u> | children | boy | pl. /s/ | |
| 22* | <u>will jump</u> | jumped | <u>are jumping</u> | future | X | 67 | under | <u>beside</u> | on | prep. | |

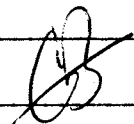
TEST OF RECEPTIVE LANGUAGE ABILITY (TERLA)

Name: Jodi Sex: M ☒ F
 School: Provincial Date: 79 4 26
 Address: 25 Green St. Birth: 6 9 26
Townville Age: 11 7 0
 Hearing Loss: R 102 db. L 109 db. Age of Onset: birth

TEST RESULTS

| | Long Form | Short Form |
|-----------------------------------|--------------|--------------|
| Singular Nouns..... | <u>10/10</u> | <u>6/6</u> |
| Plural Nouns /s/..... | <u>5/5</u> | <u>4/4</u> |
| Plural Nouns /es/..... | <u>5/5</u> | <u>4/4</u> |
| Pronouns..... | <u>9/10</u> | <u>5/6</u> |
| Descriptive Adjectives..... | <u>10/10</u> | <u>6/6</u> |
| Comparative Adjectives..... | <u>3/5</u> | <u>2/4</u> |
| Superlative Adjectives..... | <u>4/5</u> | <u>4/4</u> |
| Prepositions..... | <u>9/10</u> | <u>6/6</u> |
| Past Tense..... | <u>9/10</u> | <u>5/6</u> |
| Future Tense..... | <u>5/10</u> | <u>3/6</u> |
| Present Progressive Singular..... | <u>4/5</u> | <u>2/3</u> |
| Present Progressive Plural..... | <u>4/5</u> | <u>2/3</u> |
| TOTAL SCORE | <u>77/90</u> | <u>49/58</u> |

DIAGNOSTIC SUMMARY: Chose present progressive for future 5 of 10 times. Errors in comparison of adjectives were choice of positive forms.

Administered by: 

APPENDIX B

Table 8

Means and Standard Deviation Scores by Age for Hearing Impaired Subjects on TERLA

| Principle | 7 years | | 8 years | | 9 years | |
|------------------------------|---------|--------------------|---------|--------------------|---------|--------------------|
| | Mean | Standard Deviation | Mean | Standard Deviation | Mean | Standard Deviation |
| Singular Nouns | 8.08 | 2.2747 | 9.44 | 1.0935 | 9.56 | 1.0561 |
| Plural Nouns /s/ | 3.83 | 1.4035 | 4.94 | 0.2500 | 4.95 | 0.2236 |
| Plural Nouns /es/ | 4.00 | 1.3484 | 4.94 | 0.2500 | 5.00 | 0.0000 |
| Pronouns | 4.75 | 1.7645 | 6.88 | 2.0616 | 8.05 | 1.5035 |
| Descriptive Adjectives | 8.08 | 1.9287 | 9.50 | 0.8944 | 9.55 | 0.6863 |
| Comparative Adjectives | 3.17 | 1.3371 | 4.25 | 0.8563 | 3.90 | 1.2524 |
| Superlative Adjectives | 2.83 | 1.1934 | 4.19 | 0.8342 | 3.65 | 1.2258 |
| Prepositions | 5.75 | 1.6583 | 8.44 | 1.2633 | 8.70 | 1.3018 |
| Past Tense | 3.17 | 1.5859 | 5.50 | 2.8752 | 6.55 | 2.3946 |
| Future Tense | 2.17 | 2.1672 | 4.19 | 3.7986 | 5.35 | 3.1166 |
| Present Progressive Singular | 2.17 | 1.1146 | 3.63 | 1.1475 | 3.35 | 1.3485 |
| Present Progressive Plural | 3.75 | 1.2881 | 3.94 | 0.9979 | 3.95 | 1.2344 |

| | | | | | | | | | | |
|-----|--------------|--------------|-----------|-----------|-------|--------------|--------------|---------------|-----------|---|
| 23* | one | (two) | three | adj. | 68* | will cut | is cutting | cut | future | |
| 24* | (he) | she | they | pronoun | 69* | will sit | (sat) | is sitting | past | |
| 25* | small | (smaller) | | compar. | 70* | (glasses) | glass | glass | pl./es/ | |
| 26* | he | it | (them) | pronoun | 71* | fatter | (fat) | | compar. | X |
| 27 | pencils | (pencil) | pencils | sing. | 72* | are drinking | (drank) | will drink | past | |
| 28 | are falling | will fall | (fell) | past | 73* | sat | (is sitting) | will sit | future | X |
| 29* | (is cutting) | cut | will cut | past | X 74* | dog | (dogs) | dog | pl. /s/ | |
| 30* | car | (cars) | car | pl. /s/ | 75 | cars | cars | (car) | sing. | |
| 31* | churches | churches | (church) | sing. | 76* | (churches) | church | church | pl./es/ | |
| 32* | it | (him) | them | pronoun | 77 | is throwing | (threw) | will throw | past | |
| 33 | it | we | (I) | pronoun | 78 | thin | thin | (fat) | adj. | |
| 34* | children | (girls) | girl | pl. /s/ | 79* | she | them | (us) | pronoun | |
| 35 | (she) | he | it | pronoun | 80 | threw | will throw | (is throwing) | p.p.sing. | |
| 36* | (will jump) | are jumping | jumped | p.p.pl. | X 81* | green | orange | (yellow) | adj. | |
| 37 | (boy) | boys | boys | sing. | 82* | off | (on) | off | prep. | |
| 38* | box | box | (boxes) | pl./es/ | 83* | is drawing | drew | (will draw) | future | |
| 39* | is sitting | (will sit) | sat | p.p.sing. | X 84 | happy | (happier) | | compar. | |
| 40* | fatter | fat | (fattest) | superla. | 85* | over | (in) | under | prep. | |
| 41 | is throwing | (will throw) | threw | future | 86 | dish | dish | (dishes) | pl./es/ | |
| 42 | blue | green | (purple) | adj. | 87* | not broken | (broken) | not broken | adj. | |
| 43* | on | (off) | on | prep. | 88* | (will drink) | are drinking | drank | future | |
| 44* | (bigger) | big | | compar. | 89* | (under) | in | on | prep. | |
| 45* | brush | brush | (brushes) | pl./es/ | 90 | pencil | pencil | (pencils) | pl./s/ | |

Table 9

Means and Standard Deviation Scores by Age for Hearing Impaired Subjects on TERLA SHORT

| Principle | 7 years | | 8 years | | 9 years | |
|------------------------------|---------|--------------------|---------|--------------------|---------|--------------------|
| | Mean | Standard Deviation | Mean | Standard Deviation | Mean | Standard Deviation |
| Singular Nouns | 5.17 | 1.5275 | 5.75 | 0.6831 | 5.70 | 0.6569 |
| Plural Nouns /s/ | 3.08 | 1.2401 | 3.94 | 0.2500 | 3.96 | 0.2236 |
| Plural Nouns /es/ | 3.25 | 0.9653 | 3.94 | 0.2500 | 4.00 | 0.0000 |
| Pronouns | 2.58 | 0.7930 | 3.50 | 1.1547 | 3.90 | 1.0208 |
| Descriptive Adjectives | 5.25 | 1.1382 | 5.88 | 0.5000 | 5.75 | 0.6387 |
| Comparative Adjectives | 2.42 | 1.1645 | 3.69 | 0.4787 | 3.20 | 1.0052 |
| Superlative Adjectives | 2.33 | 0.8876 | 3.75 | 0.5774 | 3.05 | 1.0501 |
| Prepositions | 4.08 | 1.3790 | 6.00 | 6.0000 | 5.70 | 0.5712 |
| Past Tense | 1.67 | 1.3027 | 3.25 | 2.3238 | 4.15 | 1.7252 |
| Future Tense | 1.42 | 1.3790 | 2.69 | 2.3585 | 3.55 | 2.0894 |
| Present Progressive Singular | 2.00 | 1.2060 | 3.38 | 0.8851 | 2.95 | 1.1910 |
| Present Progressive Plural | 1.50 | 0.6742 | 1.56 | 0.5123 | 1.60 | 0.5982 |

Table 7
Means and Standard Deviations for Grade One Hearing
Subjects on TERLA and TERLA SHORT

| Principle | TERLA | | TERLA SHORT | |
|------------------------------|-------|--------------------|-------------|--------------------|
| | Mean | Standard Deviation | Mean | Standard Deviation |
| Singular nouns | 9.40 | 1.623 | 5.70 | 0.953 |
| Plural nouns /s/ | 4.90 | 0.320 | 3.89 | 0.320 |
| Plural nouns /es/ | 4.93 | 0.267 | 3.96 | 0.192 |
| Pronouns | 8.93 | 1.357 | 4.52 | 0.893 |
| Descriptive Adjectives | 9.56 | 0.641 | 5.89 | 0.320 |
| Comparative Adjectives | 4.74 | 0.526 | 3.85 | 0.362 |
| Superlative Adjectives | 4.56 | 0.641 | 3.82 | 0.396 |
| Prepositions | 8.96 | 0.808 | 5.96 | 0.192 |
| Past Tense | 6.30 | 2.016 | 3.78 | 1.368 |
| Future Tense | 4.63 | 2.404 | 3.59 | 1.907 |
| Present Progressive Singular | 3.93 | 0.730 | 3.67 | 0.555 |
| Present Progressive Plural | 4.70 | 0.465 | 1.96 | 0.192 |

Table 10
Analysis of Variance for Differences Between Age Groups 7,8,9,10,11,12
on the TERLA

| Source | ss | df | MS | F | Sig. |
|----------------|------------|----|-----------|--------|--------|
| Between Groups | 8411.7708 | 5 | 1682.3540 | 20.517 | 0.0000 |
| Among Groups | 6969.9753 | 85 | 81.9997 | | |
| Total | 15381.7461 | 90 | | | |

Table 11
Analysis of Variance for Differences Between Age Groups 7,8,9,10,11,12
on the TERLA SHORT

| Source | ss | df | MS | F | Sig. |
|----------------|-----------|----|----------|--------|--------|
| Between Groups | 3314.1985 | 5 | 662.8396 | 19.518 | 0.0000 |
| Among Groups | 2886.5653 | 85 | 33.9596 | | |
| Total | 6200.7617 | 90 | | | |

Table 8 (cont'd)

Means and Standard Deviation Scores by Age for Hearing Impaired Subjects on TERLA

| Principle | 10 years | | 11 years | | 12 years | |
|------------------------------|----------|--------------------|----------|--------------------|----------|--------------------|
| | Mean | Standard Deviation | Mean | Standard Deviation | Mean | Standard Deviation |
| Singular Nouns | 9.81 | 0.4031 | 9.86 | 0.5345 | 10.00 | 0.0000 |
| Plural Nouns /s/ | 4.94 | 0.2500 | 4.93 | 0.2673 | 5.00 | 0.0000 |
| Plural Nouns /es/ | 4.94 | 0.2500 | 5.00 | 0.0000 | 5.00 | 0.0000 |
| Pronouns | 8.56 | 1.8608 | 9.07 | 0.9169 | 9.00 | 0.8944 |
| Descriptive Adjectives | 9.56 | 0.7274 | 9.93 | 0.2673 | 9.91 | 0.3015 |
| Comparative Adjectives | 4.31 | 0.9465 | 4.14 | 0.8644 | 4.55 | 0.2727 |
| Superlative Adjectives | 4.44 | 0.8139 | 4.14 | 0.9493 | 4.18 | 0.8739 |
| Prepositions | 8.88 | 0.9574 | 9.07 | 1.0716 | 9.82 | 0.4045 |
| Past Tense | 7.31 | 1.6621 | 7.29 | 2.0913 | 6.91 | 2.2115 |
| Future Tense | 6.31 | 3.3210 | 6.29 | 3.5176 | 8.18 | 1.9909 |
| Present Progressive Singular | 4.06 | 0.8539 | 3.79 | 0.8018 | 3.91 | 1.5783 |
| Present Progressive Plural | 4.69 | 0.6021 | 4.50 | 0.7596 | 4.09 | 1.4909 |

Table 9 (cont'd)

Means and Standard Deviation Scores by Age for Hearing Impaired Subjects on TERLA SHORT

| Principle | 10 years | | 11 years | | 12 years | |
|------------------------------|----------|--------------------|----------|--------------------|----------|--------------------|
| | Mean | Standard Deviation | Mean | Standard Deviation | Mean | Standard Deviation |
| Singular Nouns | 5.88 | 0.3416 | 5.93 | 0.2673 | 6.00 | 0.0000 |
| Plural Nouns /s/ | 3.94 | 0.2500 | 3.93 | 0.2673 | 4.00 | 0.0000 |
| Plural Nouns /es/ | 4.00 | 0.0000 | 4.00 | 0.0000 | 4.00 | 0.0000 |
| Pronouns | 4.31 | 1.0782 | 4.71 | 0.4688 | 4.36 | 0.6742 |
| Descriptive Adjectives | 5.81 | 0.4031 | 5.93 | 0.2673 | 5.91 | 0.3015 |
| Comparative Adjectives | 3.56 | 0.7274 | 3.50 | 0.7596 | 3.73 | 0.4671 |
| Superlative Adjectives | 3.88 | 0.5000 | 3.57 | 0.6462 | 3.73 | 0.6467 |
| Prepositions | 5.94 | 0.2500 | 5.79 | 0.4258 | 6.00 | 0.0000 |
| Past Tense | 4.13 | 1.3102 | 4.36 | 1.3363 | 4.27 | 1.5551 |
| Future Tense | 4.38 | 2.0290 | 4.00 | 2.3859 | 5.27 | 1.5551 |
| Present Progressive Singular | 3.56 | 0.6292 | 3.43 | 0.5136 | 3.18 | 1.4709 |
| Present Progressive Plural | 1.94 | 0.2500 | 1.64 | 0.4972 | 1.64 | 0.6742 |

Figure 1

Homogenous Subsets¹ Showing Source of Variation by Age Groups
for TERLA

Subset 1

Group 7
Mean 50.43

Subset 2

| | | | | |
|-------|-------|-------|-------|-------|
| Group | 8 | 9 | 10 | 11 |
| Mean | 69.81 | 72.55 | 77.81 | 78.00 |

Subset 3

| | | | | |
|-------|-------|-------|-------|-------|
| Group | 9 | 10 | 11 | 12 |
| Mean | 72.55 | 77.81 | 78.00 | 80.55 |

Homogenous Subsets¹ Showing Source of Variation by Age Groups
for TERLA SHORT

Subset 1

Group 7
Mean 33.57

Subset 2

| | | | | | |
|-------|-------|-------|-------|-------|-------|
| Group | 8 | 9 | 11 | 10 | 12 |
| Mean | 47.31 | 47.50 | 50.79 | 51.31 | 52.09 |

¹ Duncan Multiple Range (Subsets of groups whose highest and lowest means do not differ by more than the shortest significant range for a subset of that size.)

APPENDIX C

Table 12

Percentile Ranks and Stanines Corresponding to Raw Scores for Age 7 on TERLA

| Raw Score | %ile Rank | Stanine | Raw Score | %ile Rank | Stanine | Raw Score | %ile Rank | Stanine |
|-----------|-----------|---------|-----------|-----------|---------|-----------|-----------|---------|
| 66 | 93.0 | 9 | 56 | 66.0 | 6 | 46 | 39.8 | 4 |
| 65 | 91.0 | 8 | 55 | 59.0 | 6 | 45 | 38.5 | 4 |
| 64 | 89.8 | 8 | 54 | 56.0 | 5 | 44 | 37.2 | 4 |
| 63 | 88.5 | 7 | 53 | 53.0 | 5 | 43 | 36.0 | 3 |
| 62 | 87.3 | 7 | 52 | 49.5 | 5 | 42 | 23.0 | 3 |
| 61 | 86.0 | 7 | 51 | 46.0 | 5 | 41 | 19.7 | 3 |
| 60 | 79.0 | 7 | 50 | 44.8 | 5 | 40 | 16.3 | 2 |
| 59 | 77.0 | 6 | 49 | 43.5 | 5 | 39 | 13.0 | 2 |
| 58 | 75.0 | 6 | 48 | 42.3 | 4 | 38 | 6.0 | 1 |
| 57 | 73.0 | 6 | 47 | 41.0 | 4 | | | |

Table 13

Percentile Ranks and Stanines Corresponding to Raw Scores for Age 8 on TERLA

| Raw Score | %ile Rank | Stanine | Raw Score | %ile Rank | Stanine | Raw Score | %ile Rank | Stanine |
|-----------|-----------|---------|-----------|-----------|---------|-----------|-----------|---------|
| 83 | 91.0 | 9 | 74 | 59.5 | 6 | 65 | 38.0 | 4 |
| 82 | 82.0 | 8 | 73 | 58.0 | 6 | 64 | 35.0 | 4 |
| 81 | 80.0 | 8 | 72 | 56.5 | 5 | 63 | 32.0 | 4 |
| 80 | 78.0 | 7 | 71 | 55.0 | 5 | 62 | 29.0 | 4 |
| 79 | 76.0 | 7 | 70 | 53.5 | 5 | 61 | 26.0 | 3 |
| 78 | 70.0 | 7 | 69 | 52.0 | 5 | 60 | 22.0 | 3 |
| 77 | 64.0 | 6 | 68 | 48.3 | 5 | 59 | 18.0 | 3 |
| 76 | 62.5 | 6 | 67 | 44.7 | 5 | 58 | 14.0 | 2 |
| 75 | 61.0 | 6 | 66 | 41.0 | 4 | 57 | 5.0 | 1 |

Table 14

Percentile Ranks and Stanines Corresponding to Raw Scores for Age 9 on TERLA

| Raw Score | %ile Rank | Stanine | Raw Score | %ile Rank | Stanine | Raw Score | %ile Rank | Stanine |
|-----------|-----------|---------|-----------|-----------|---------|-----------|-----------|---------|
| 90 | 92.0 | 9 | 76 | 52.0 | 6 | 62 | 18.0 | 4 |
| 89 | 91.0 | 9 | 75 | 51.0 | 6 | 61 | 16.0 | 4 |
| 88 | 90.0 | 8 | 74 | 50.0 | 6 | 60 | 14.0 | 4 |
| 87 | 89.0 | 8 | 73 | 49.0 | 5 | 59 | 12.8 | 4 |
| 86 | 88.0 | 8 | 72 | 48.0 | 5 | 58 | 11.5 | 3 |
| 85 | 87.0 | 7 | 71 | 47.0 | 5 | 57 | 10.3 | 3 |
| 84 | 86.0 | 7 | 70 | 45.3 | 5 | 56 | 9.0 | 3 |
| 83 | 85.0 | 7 | 69 | 43.5 | 5 | 55 | 8.3 | 3 |
| 82 | 80.5 | 7 | 68 | 41.8 | 5 | 54 | 7.6 | 3 |
| 81 | 76.0 | 7 | 67 | 40.0 | 5 | 53 | 6.8 | 2 |
| 80 | 66.0 | 6 | 66 | 26.0 | 5 | 52 | 6.1 | 2 |
| 79 | 63.5 | 6 | 65 | 24.0 | 4 | 51 | 5.4 | 2 |
| 78 | 61.0 | 6 | 64 | 22.0 | 4 | 50 | 4.7 | 1 |
| 77 | 57.0 | 6 | 63 | 20.0 | 4 | 49 | 4.0 | 1 |

Table 15

Percentile Ranks and Stanines Corresponding to Raw Scores for Age 10 on TERLA

| Raw Score | %ile Rank | Stanine | Raw Score | %ile Rank | Stanine | Raw Score | %ile Rank | Stanine |
|-----------|-----------|---------|-----------|-----------|---------|-----------|-----------|---------|
| 90 | 94.0 | 9 | 80 | 55.0 | 6 | 70 | 17.0 | 4 |
| 89 | 91.0 | 8 | 79 | 47.0 | 6 | 69 | 16.2 | 4 |
| 88 | 88.0 | 8 | 78 | 41.0 | 5 | 68 | 15.3 | 4 |
| 87 | 82.0 | 7 | 77 | 38.0 | 5 | 67 | 14.4 | 3 |
| 86 | 80.5 | 7 | 76 | 35.0 | 5 | 66 | 13.6 | 3 |
| 85 | 79.0 | 7 | 75 | 32.0 | 5 | 65 | 12.7 | 3 |
| 84 | 77.5 | 7 | 74 | 29.0 | 5 | 64 | 11.6 | 3 |
| 83 | 76.0 | 6 | 73 | 23.0 | 5 | 63 | 11.0 | 2 |
| 82 | 70.0 | 6 | 72 | 21.0 | 4 | 62 | 8.0 | 2 |
| 81 | 64.0 | 6 | 71 | 19.0 | 4 | 61 | 5.0 | 1 |

Table 16

Percentile Ranks and Stanines Corresponding to Raw Scores for Age 11 on TERLA

| Raw Score | %ile Rank | Stanine | Raw Score | %ile Rank | Stanine | Raw Score | %ile Rank | Stanine |
|-----------|-----------|---------|-----------|-----------|---------|-----------|-----------|---------|
| 90 | 93.0 | 9 | 81 | 53.0 | 6 | 72 | 28.3 | 4 |
| 89 | 89.5 | 8 | 80 | 49.5 | 6 | 71 | 27.2 | 4 |
| 88 | 86.0 | 8 | 79 | 46.0 | 5 | 70 | 26.0 | 3 |
| 87 | 84.3 | 7 | 78 | 39.0 | 5 | 69 | 19.0 | 3 |
| 86 | 82.5 | 7 | 77 | 36.0 | 5 | 68 | 16.5 | 3 |
| 85 | 80.6 | 7 | 76 | 33.0 | 5 | 67 | 14.0 | 2 |
| 84 | 79.0 | 6 | 75 | 31.8 | 5 | 66 | 11.5 | 2 |
| 83 | 73.0 | 6 | 74 | 30.5 | 4 | 65 | 9.0 | 1 |
| 82 | 63.0 | 6 | 73 | 29.5 | 4 | | | |

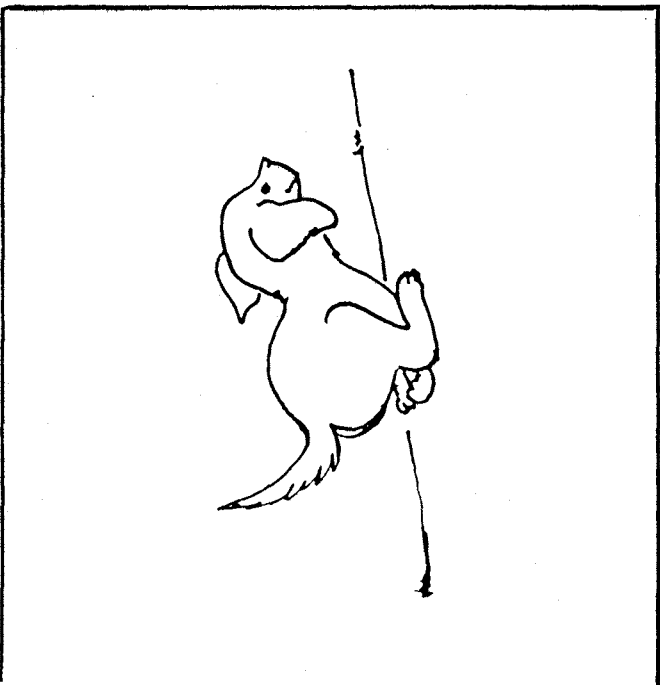
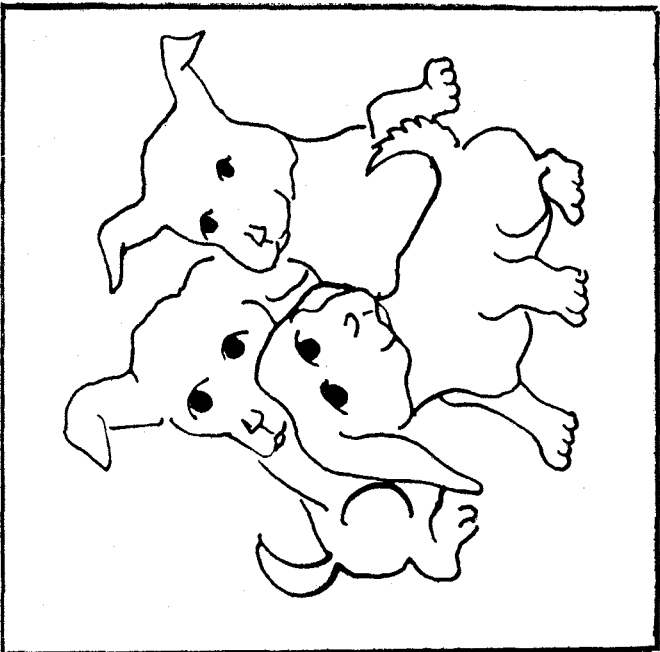
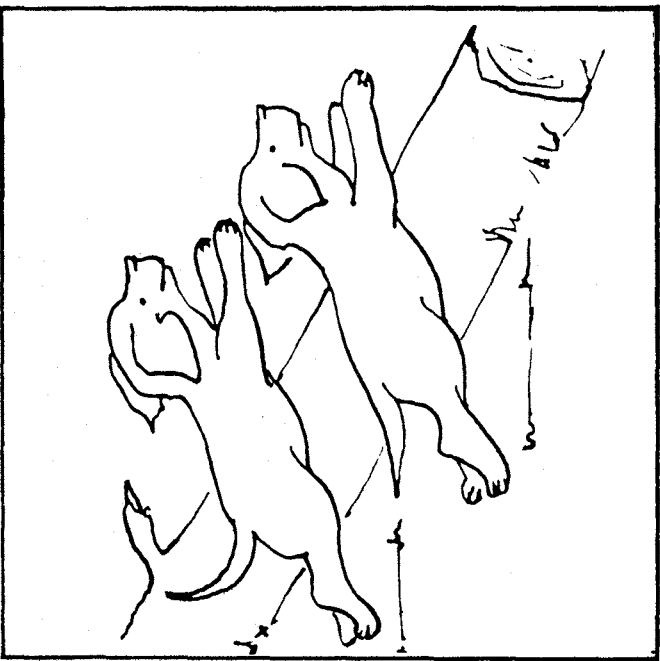
Table 17

Percentile Ranks and Stanines Corresponding to Raw Scores for Age 12 on TERLA

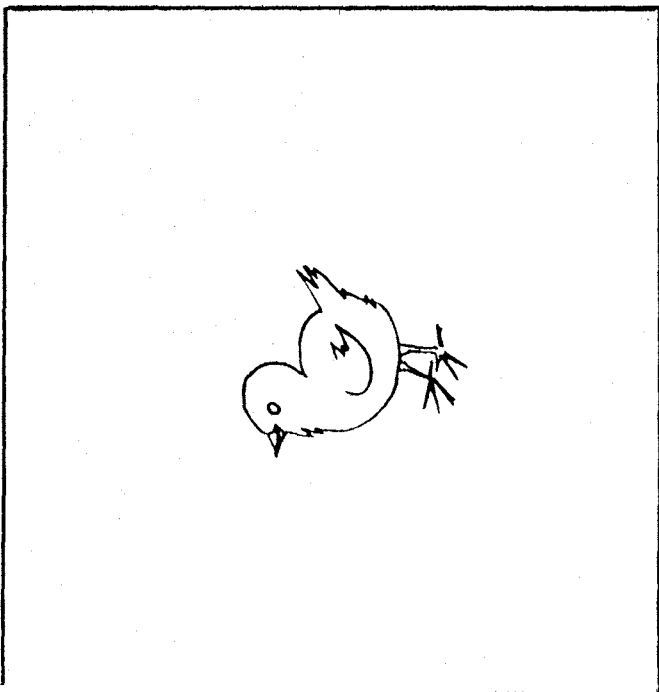
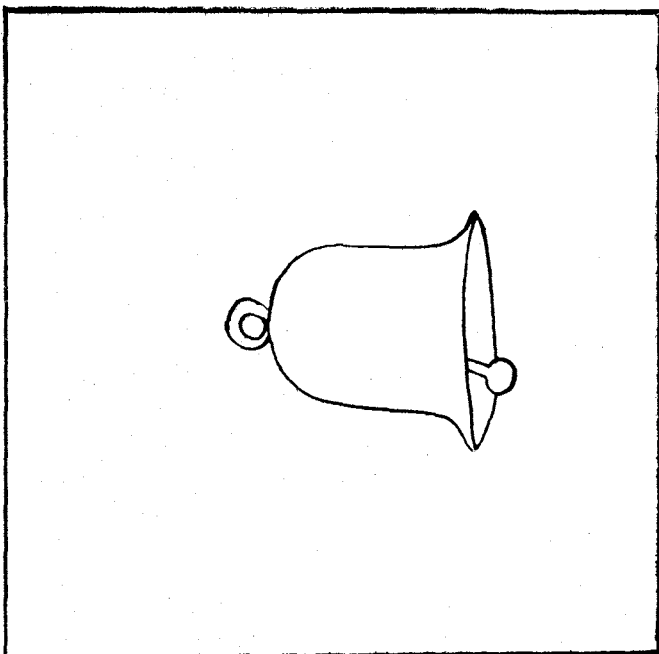
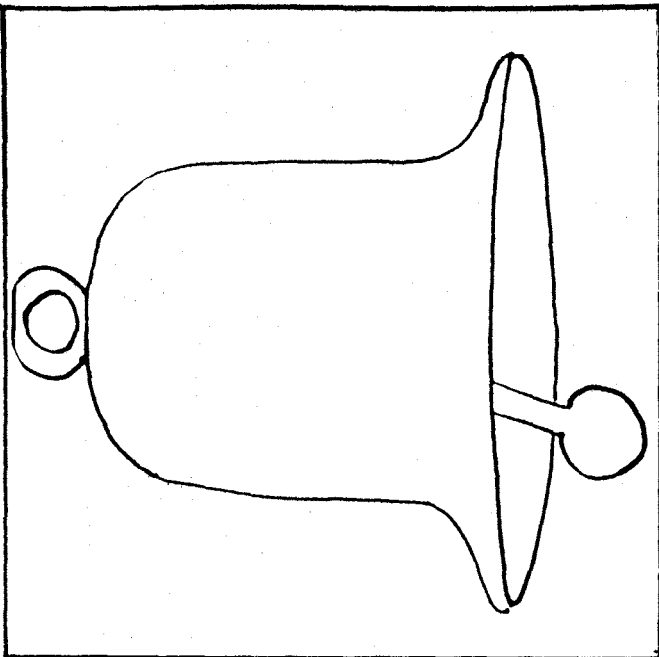
| Raw Score | %ile Rank | Stanine | Raw Score | %ile Rank | Stanine | Raw Score | %ile Rank | Stanine |
|-----------|-----------|---------|-----------|-----------|---------|-----------|-----------|---------|
| 90 | 91.0 | 9 | 80 | 39.0 | 5 | | | |
| 89 | 88.3 | 8 | 79 | 37.0 | 5 | | | |
| 88 | 85.7 | 7 | 78 | 35.0 | 4 | | | |
| 87 | 83.0 | 7 | 77 | 33.0 | 4 | | | |
| 86 | 74.0 | 6 | 76 | 30.8 | 4 | | | |
| 85 | 68.0 | 6 | 75 | 28.5 | 3 | | | |
| 84 | 62.0 | 6 | 74 | 26.3 | 3 | | | |
| 83 | 55.5 | 5 | 73 | 24.0 | 2 | | | |
| 82 | 49.0 | 5 | 72 | 16.0 | 2 | | | |
| 81 | 41.0 | 5 | 71 | 8.0 | 1 | | | |

TEST ITEMS

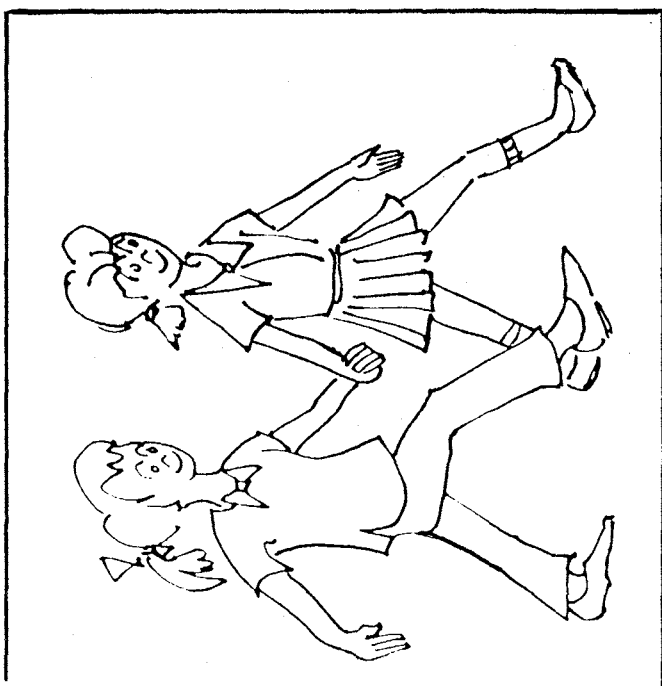
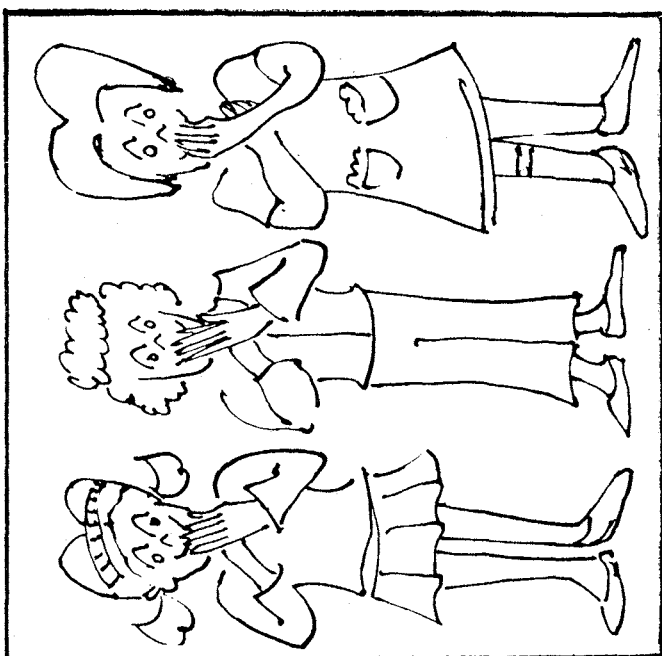
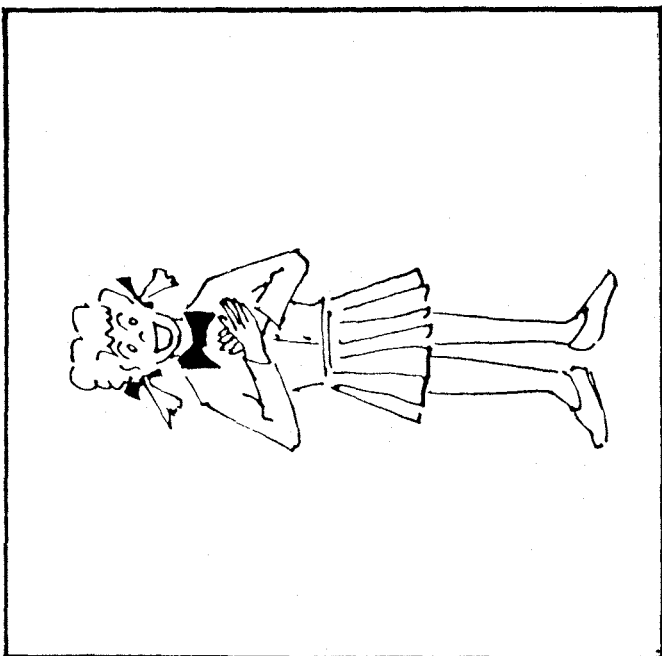
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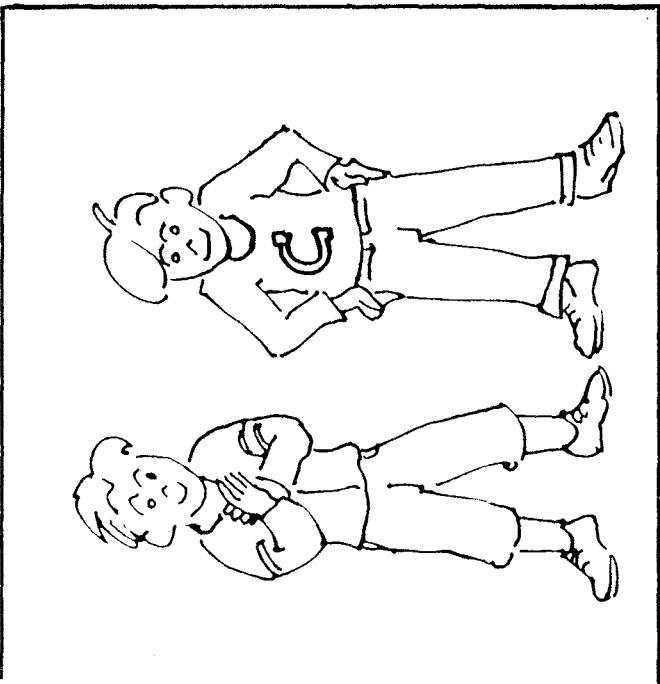
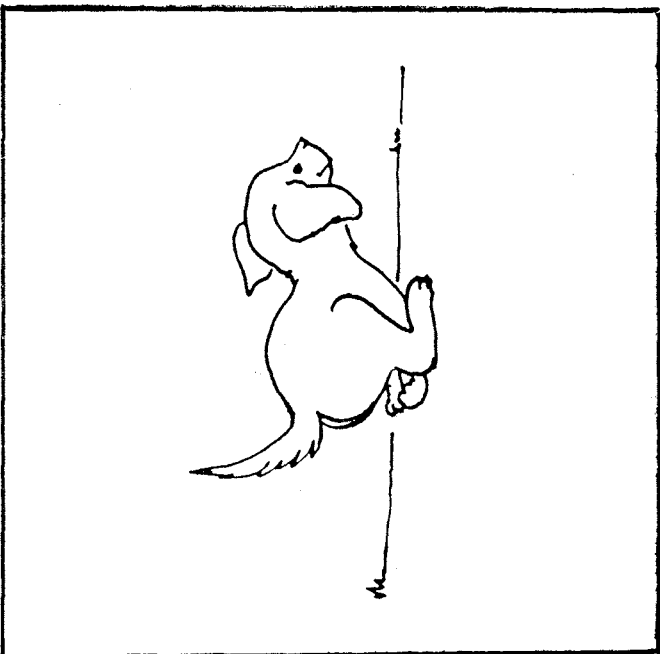
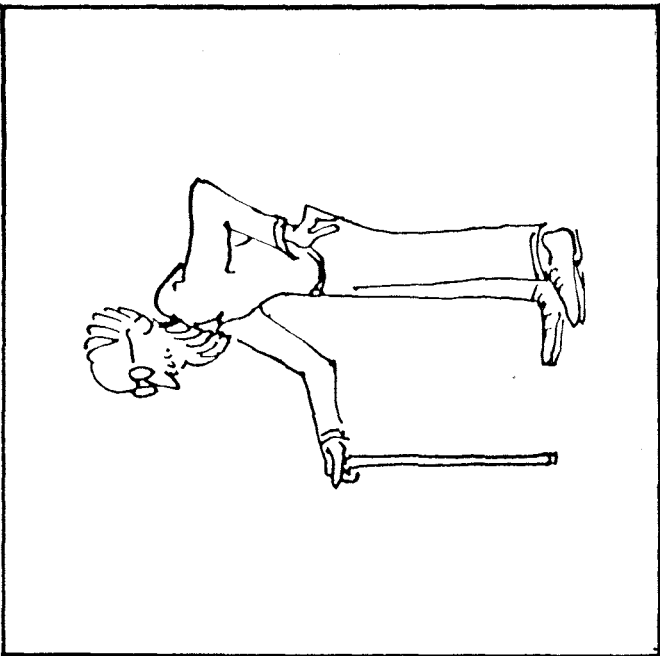
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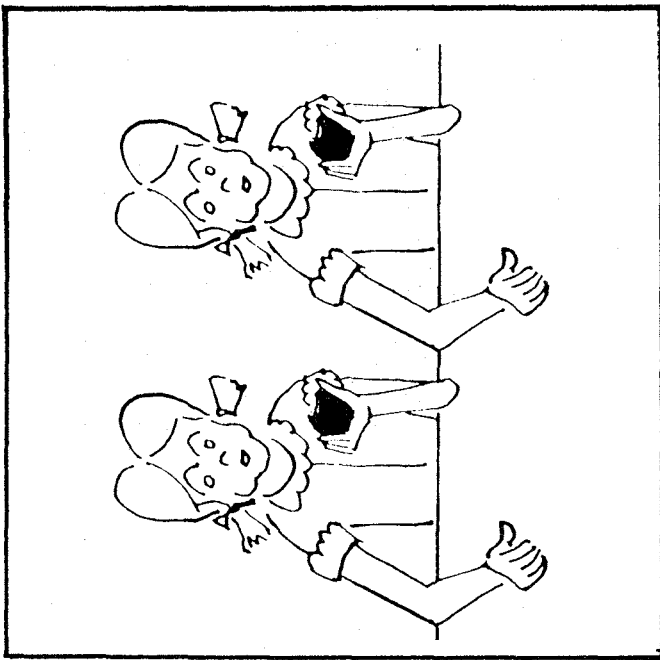
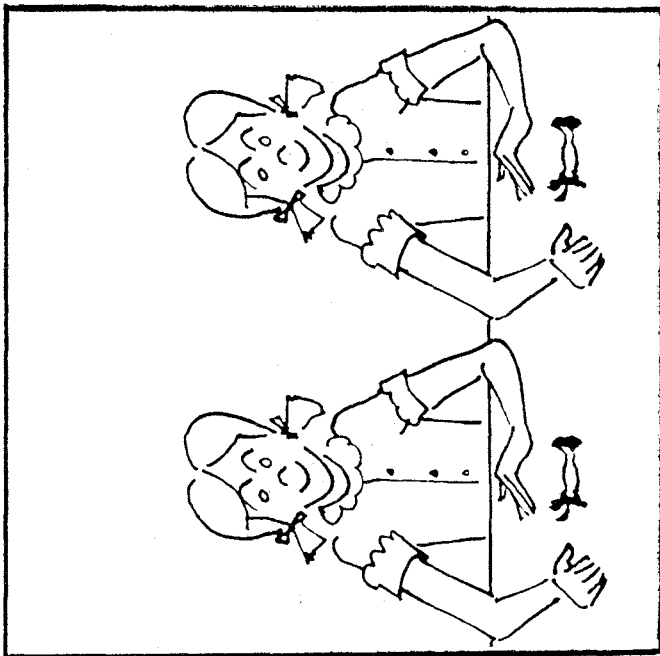
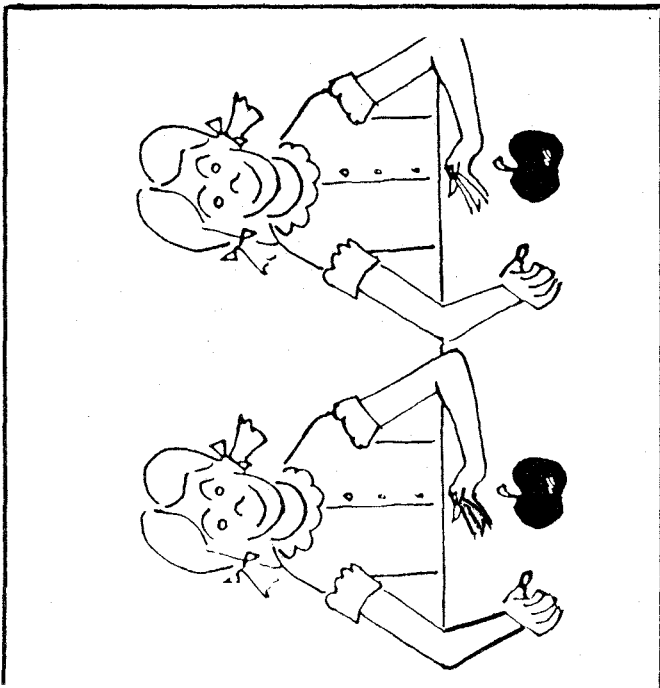


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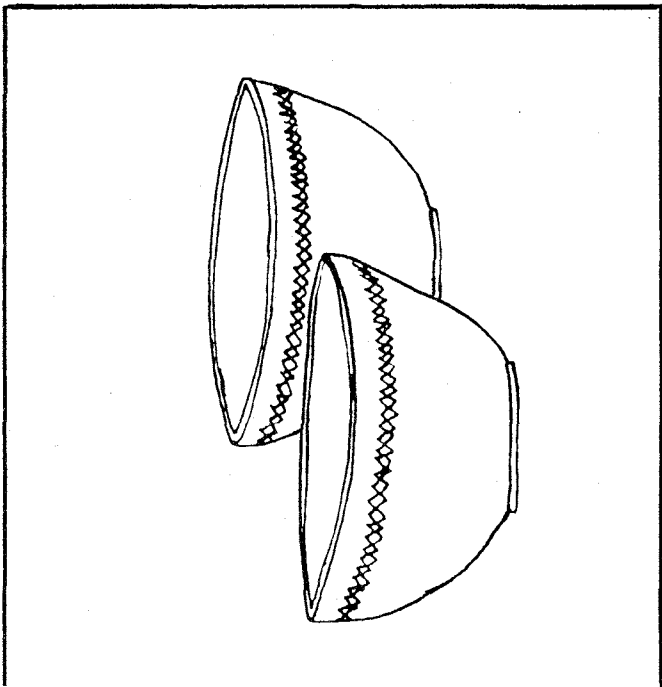
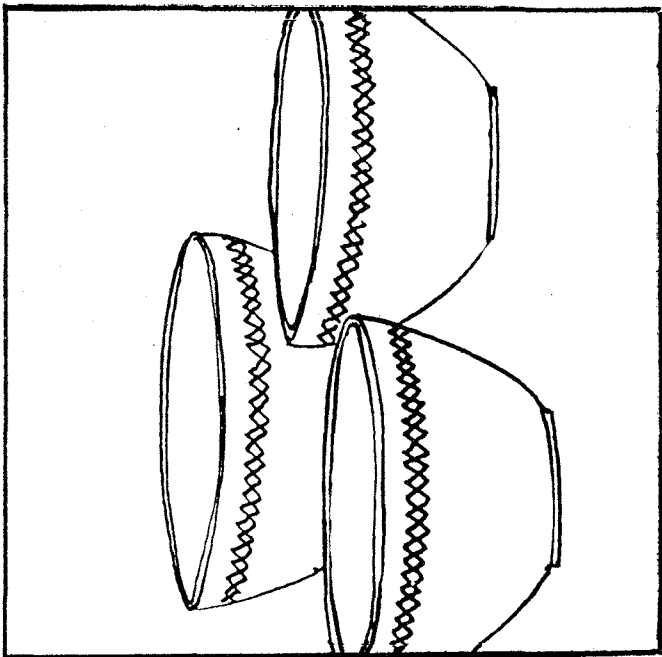
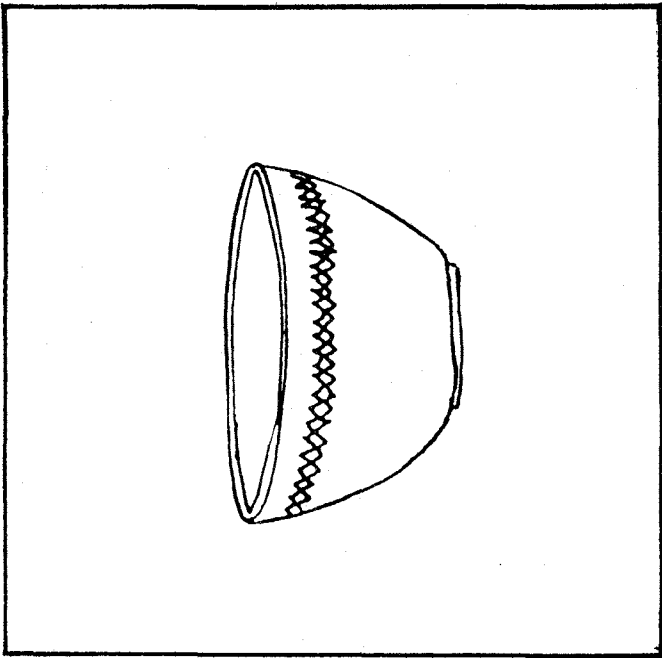


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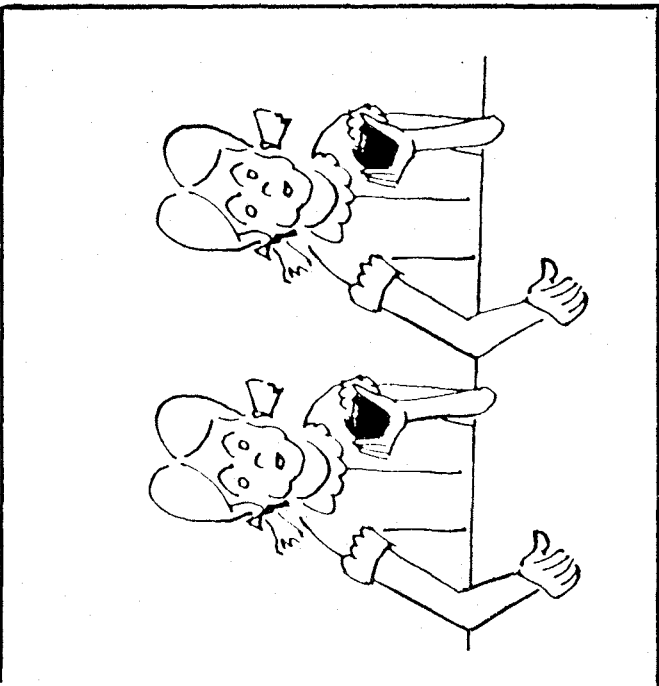
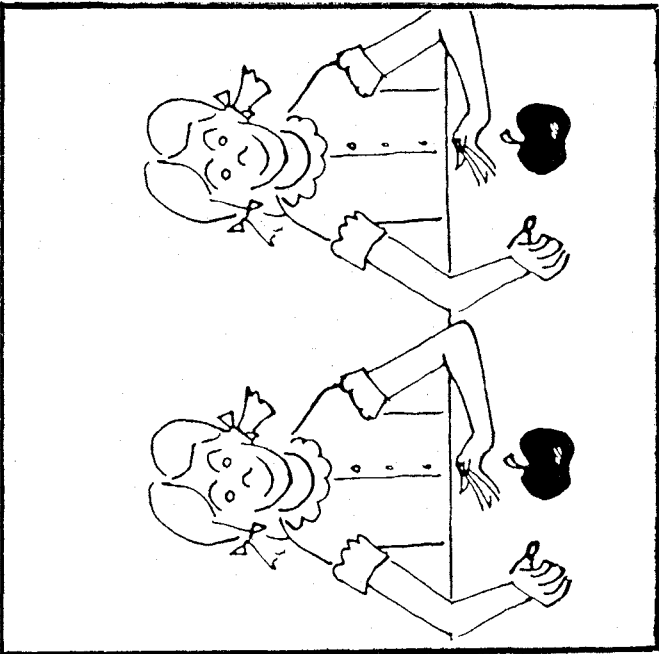
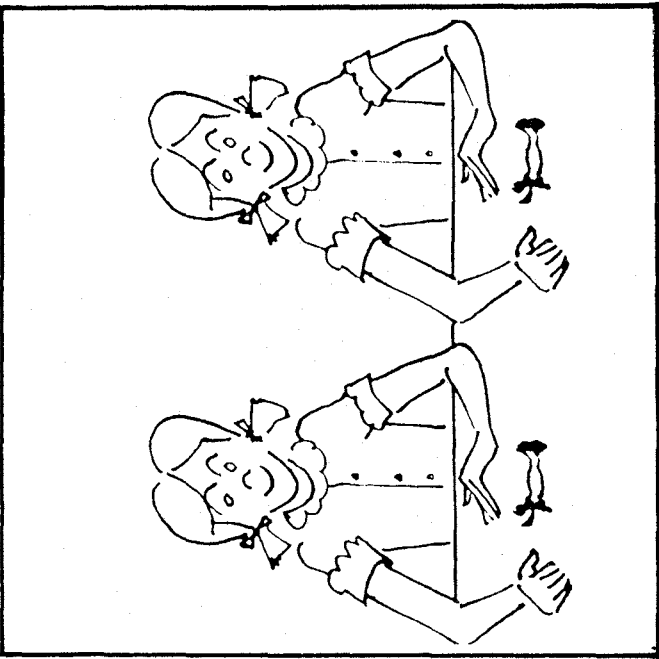


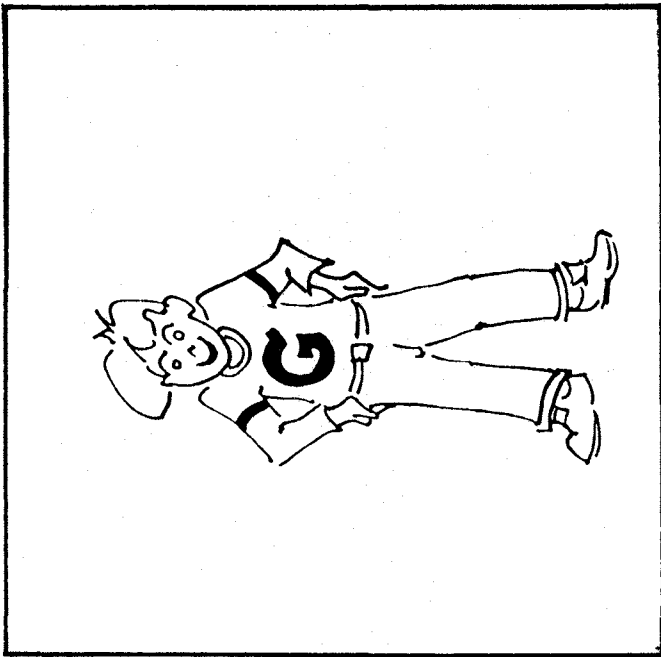
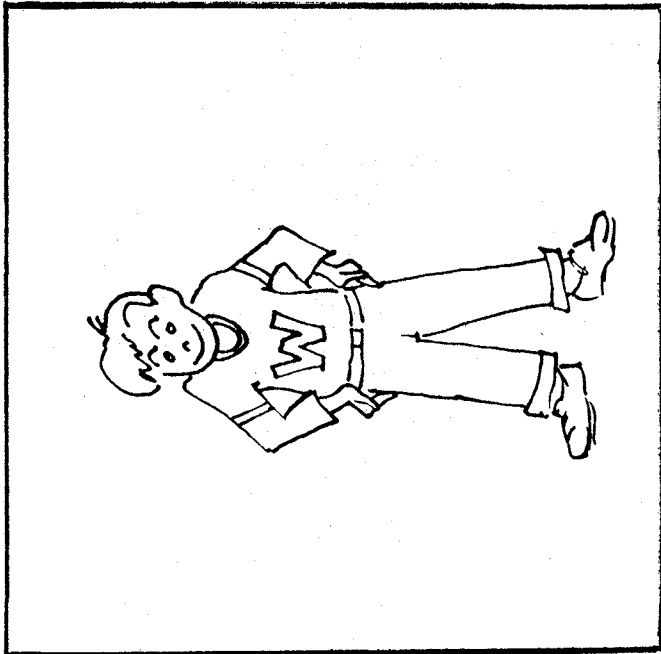
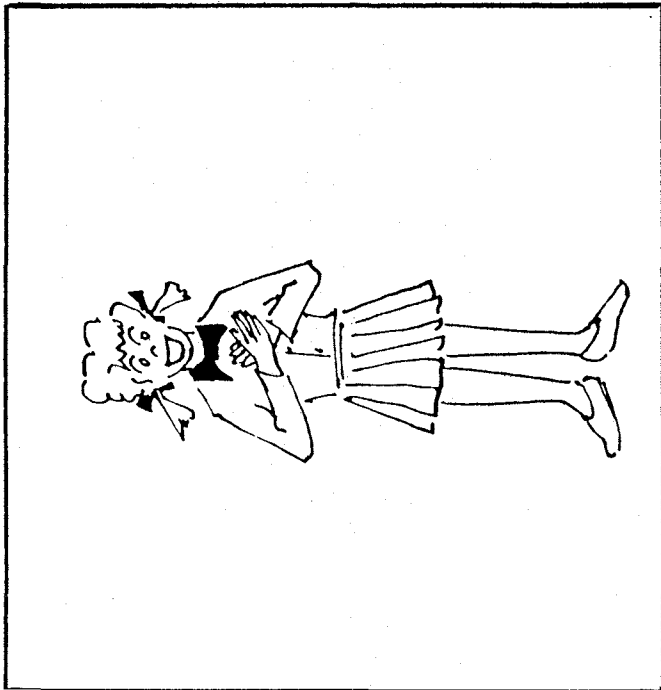
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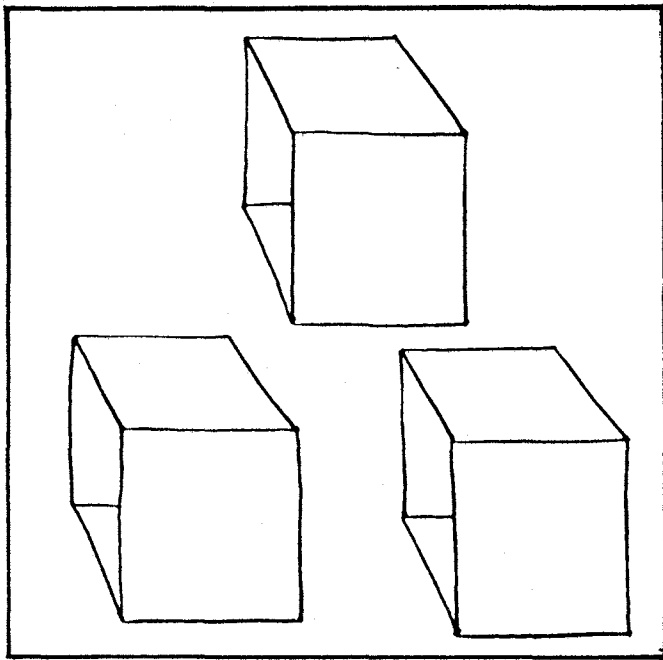
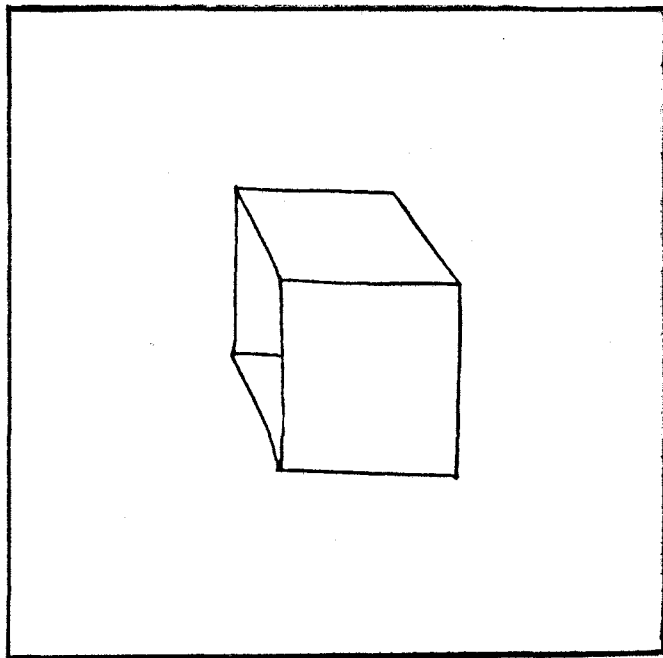
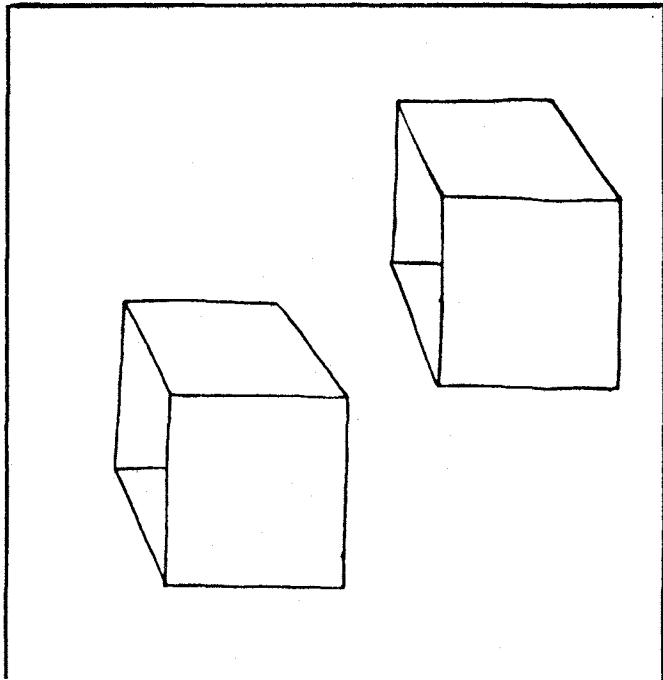
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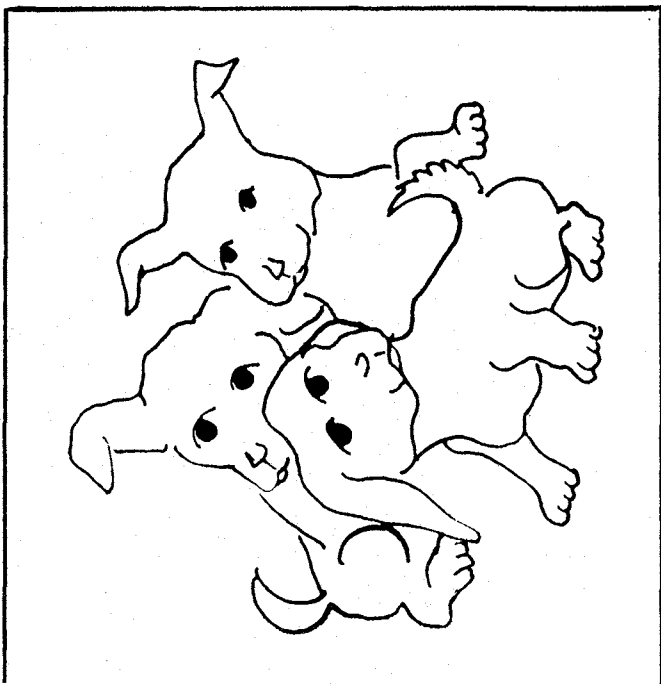
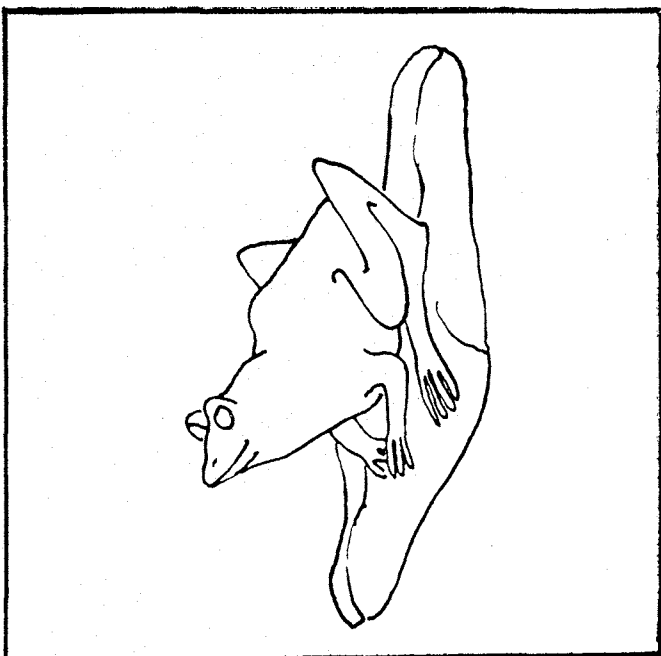
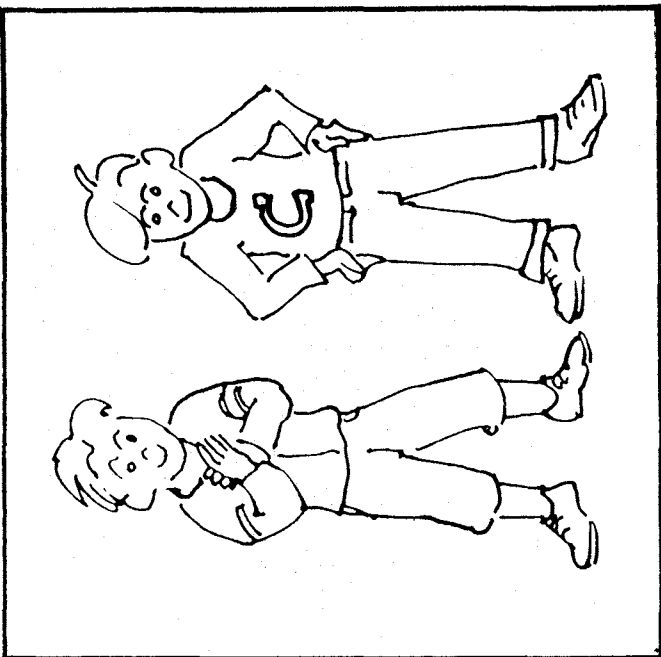
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*b

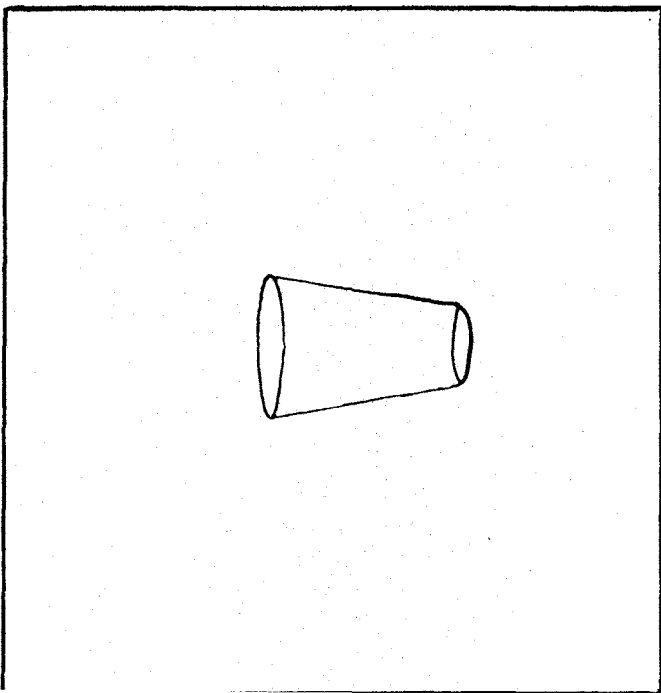
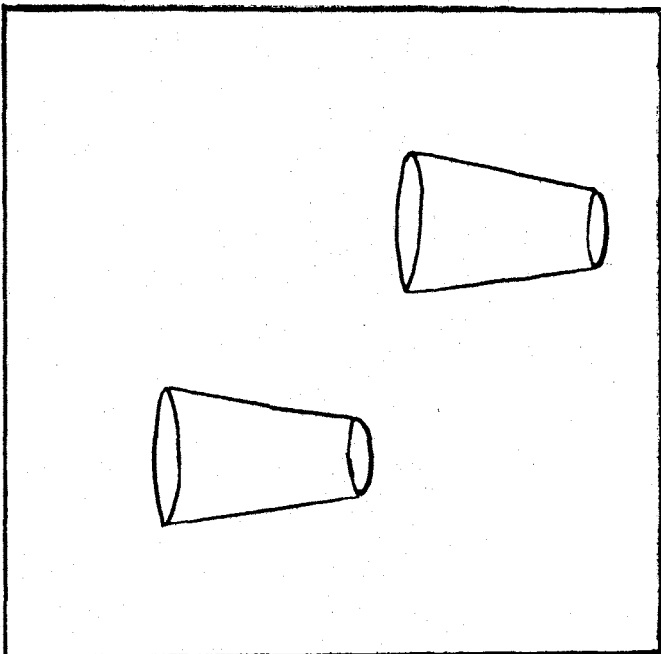
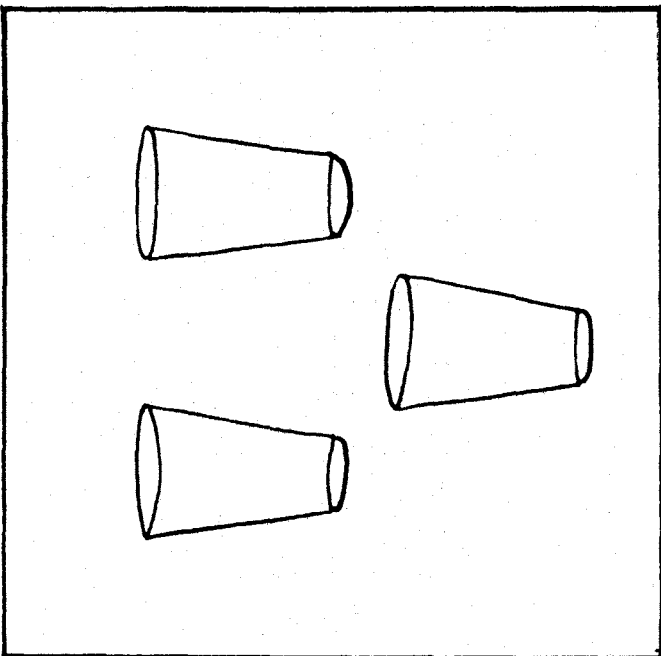


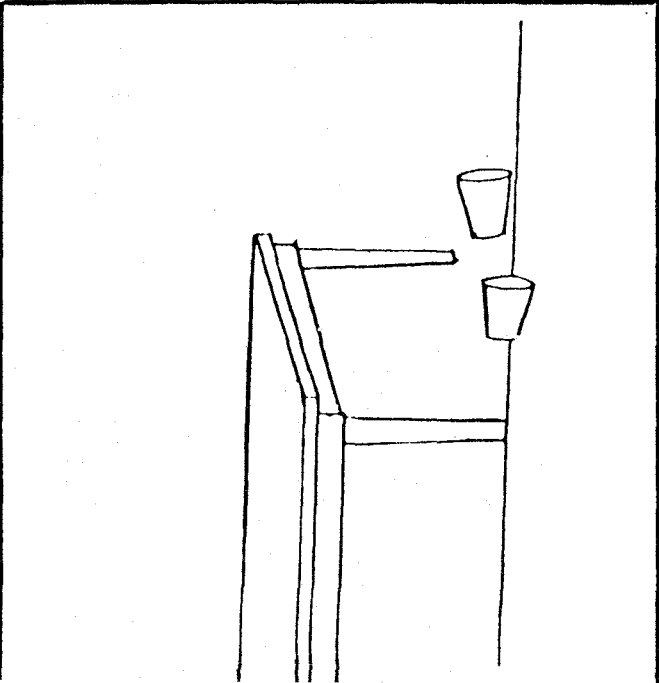
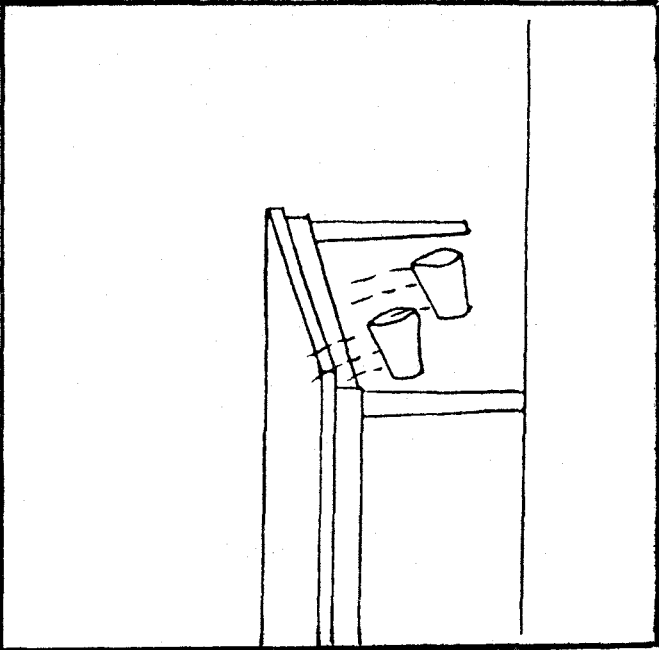
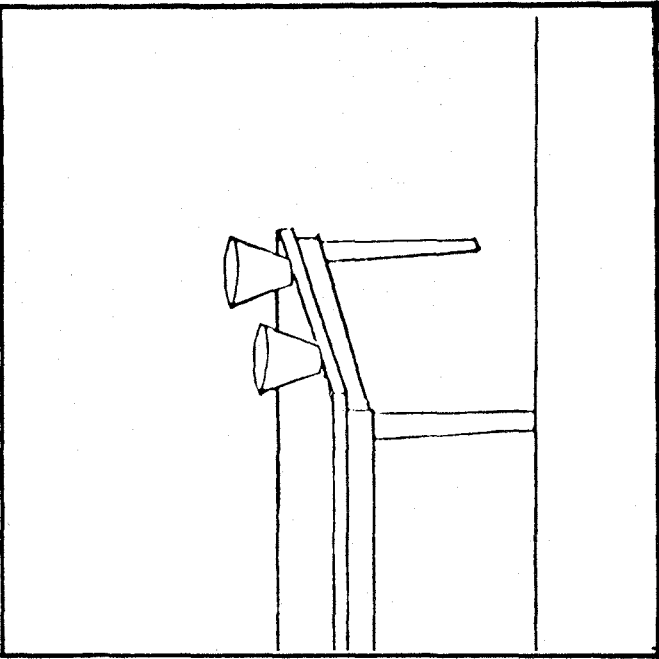
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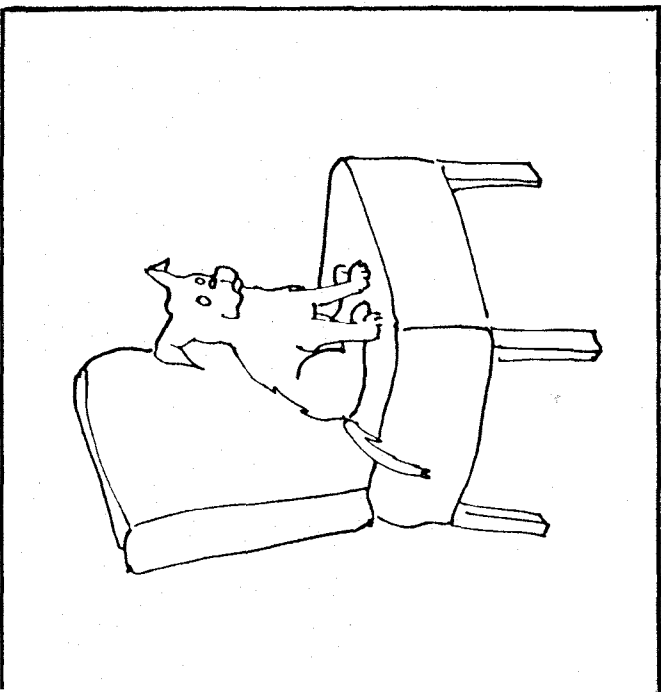
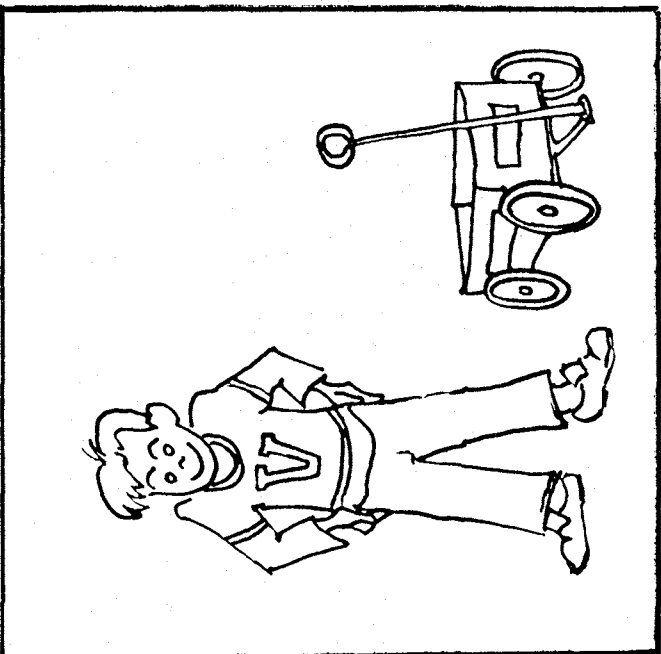
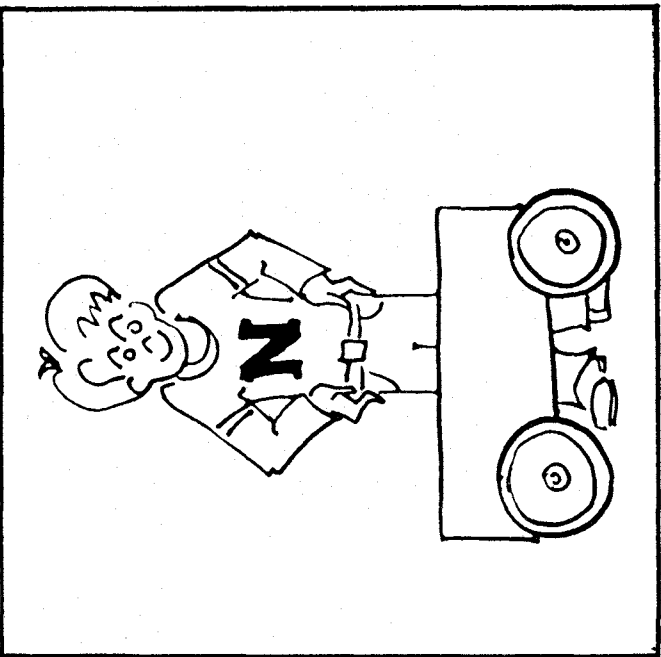
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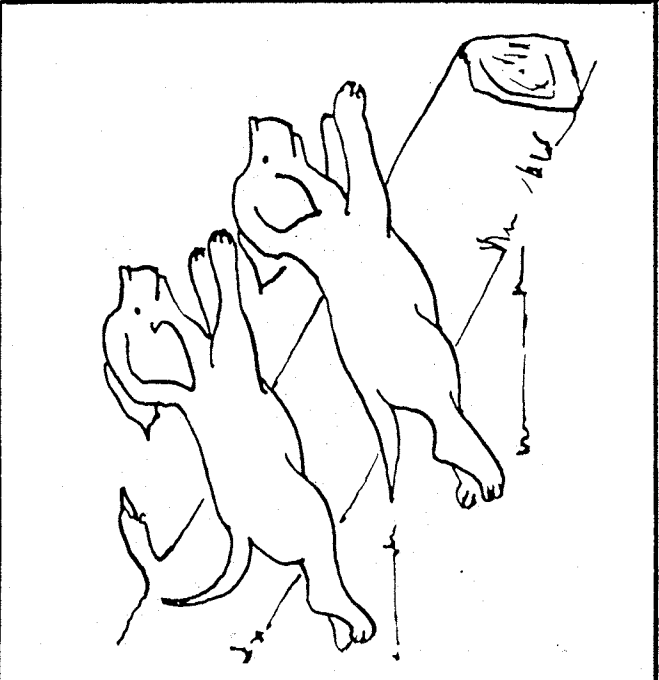
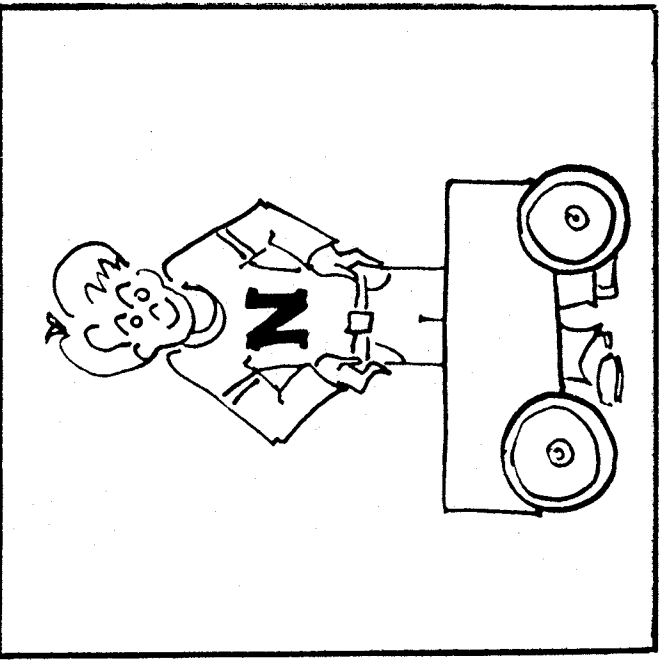
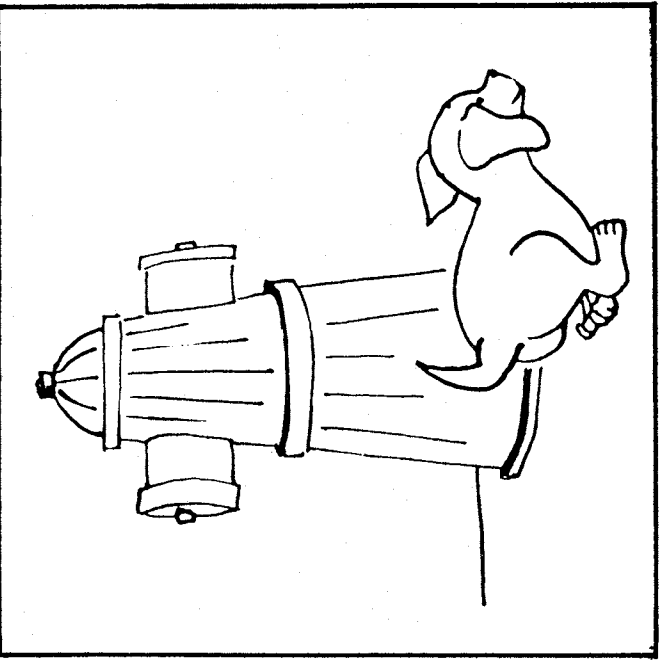


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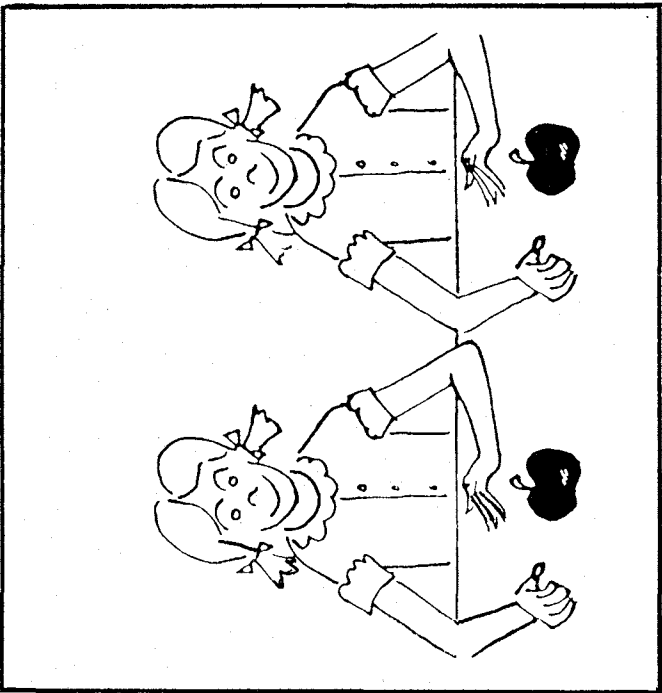
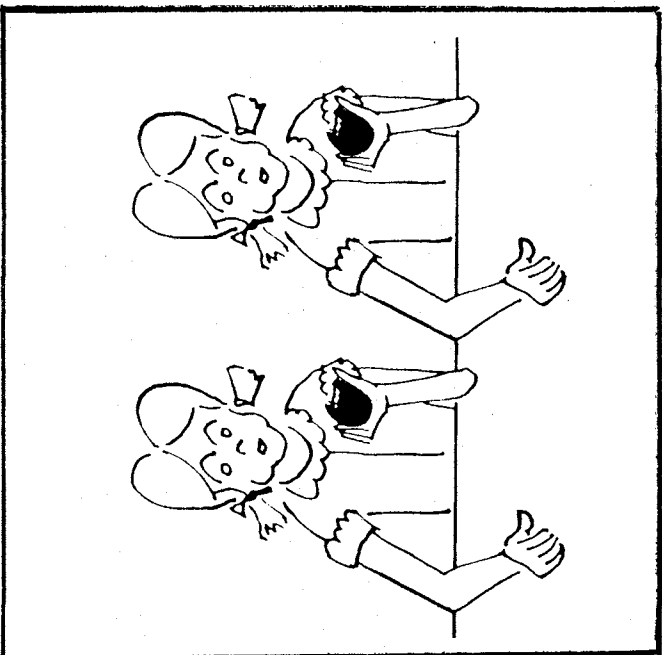
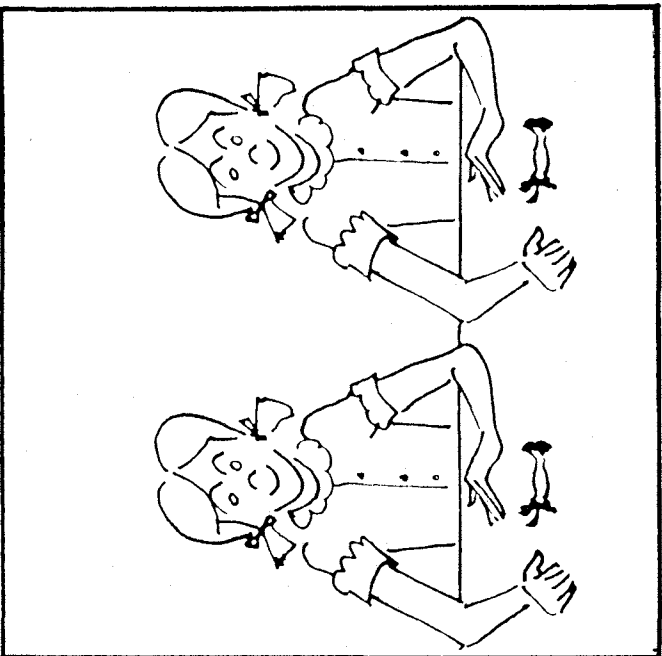
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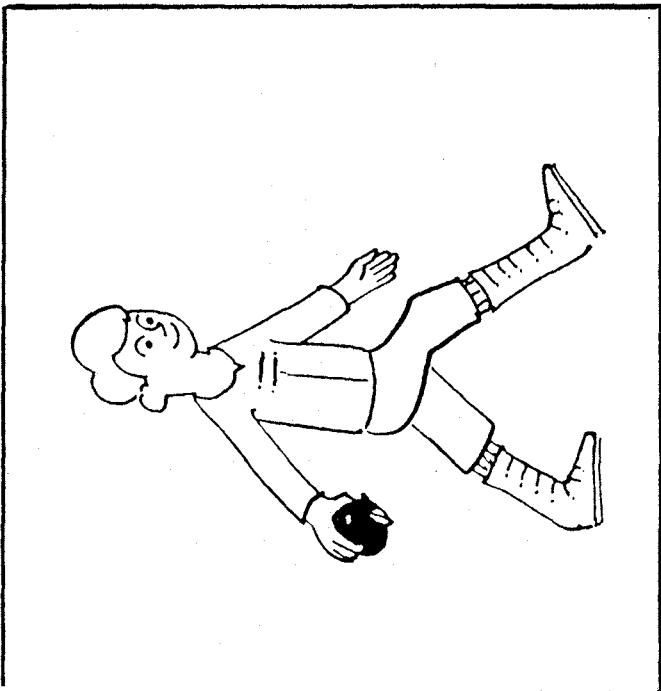
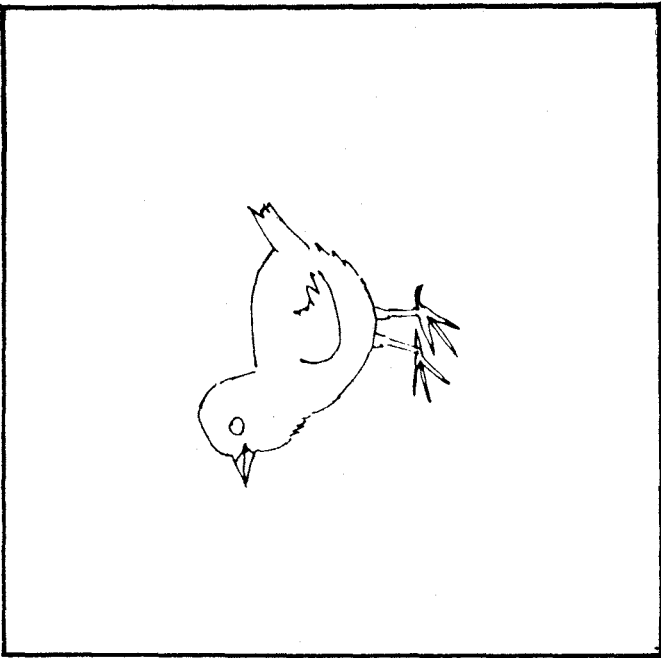
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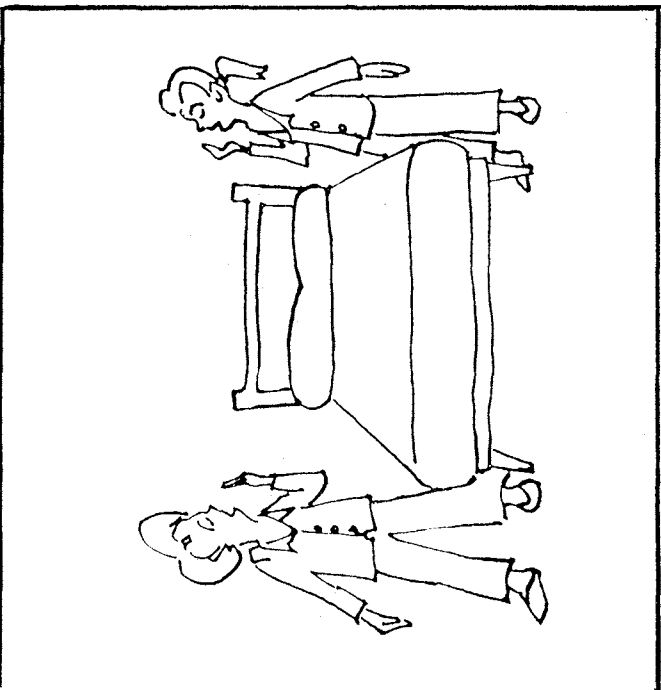
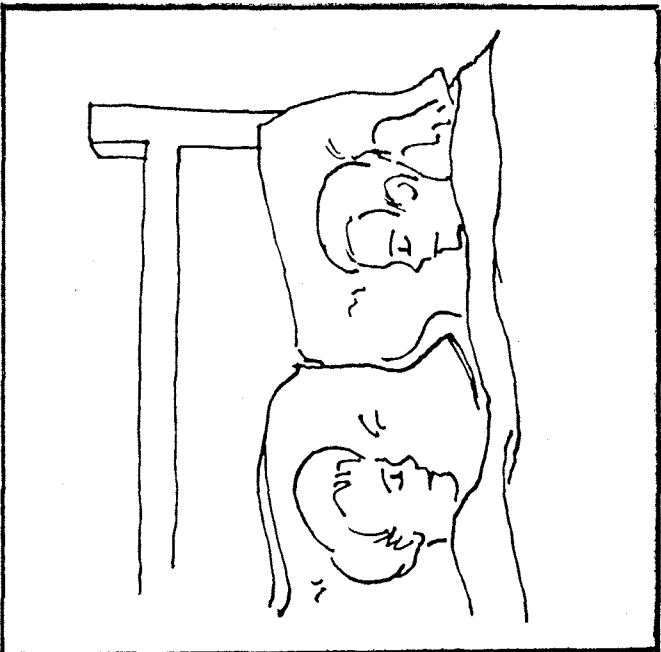
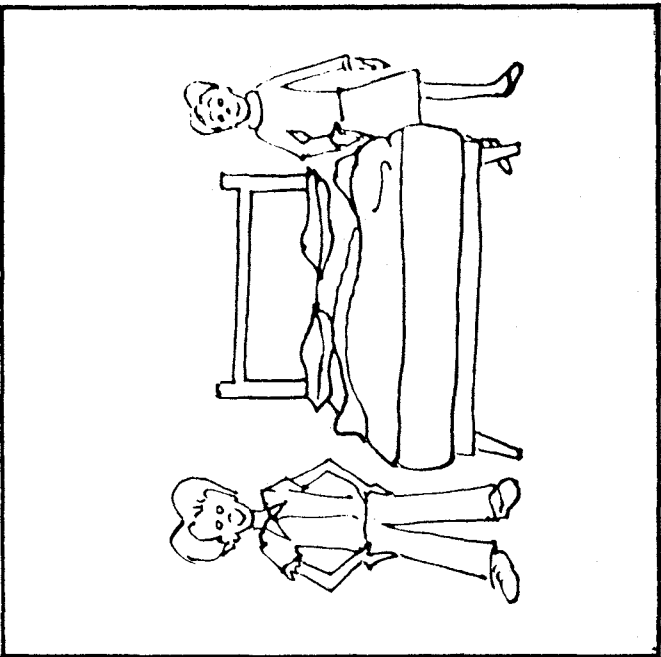
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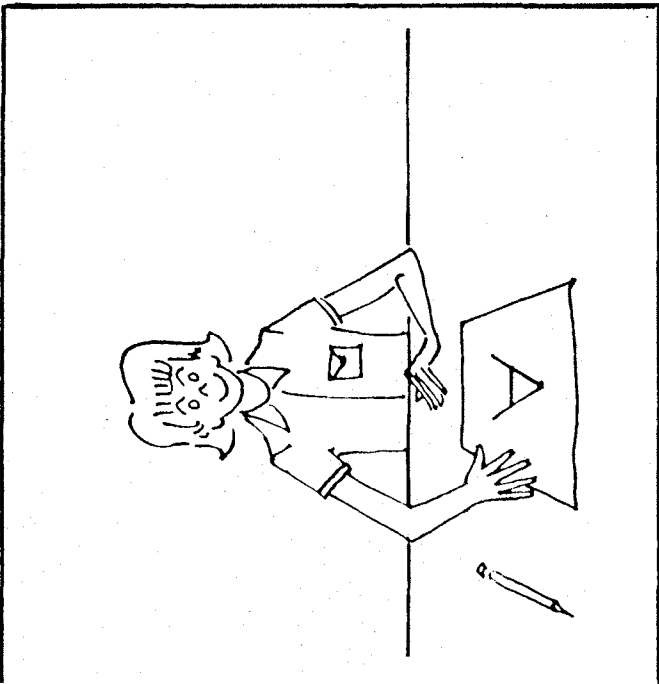
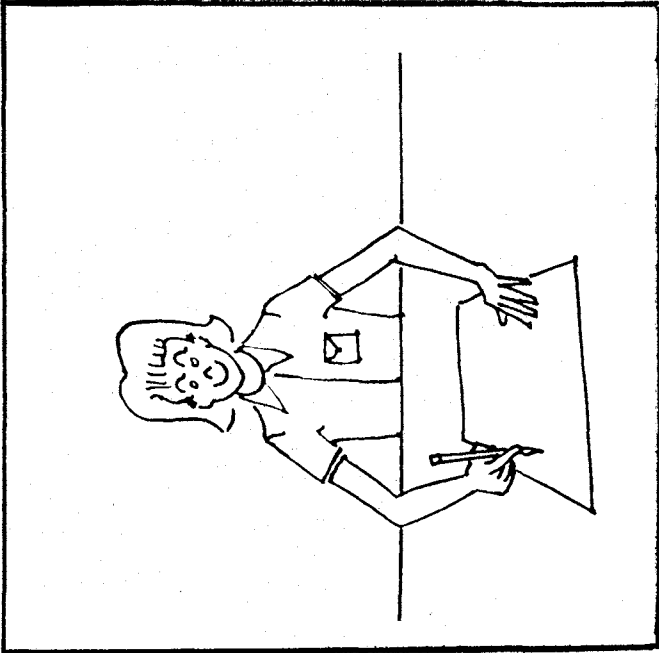
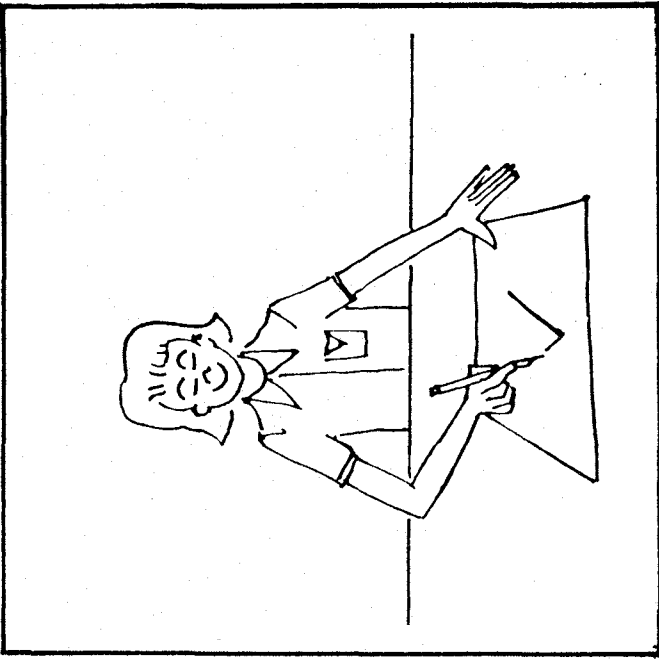
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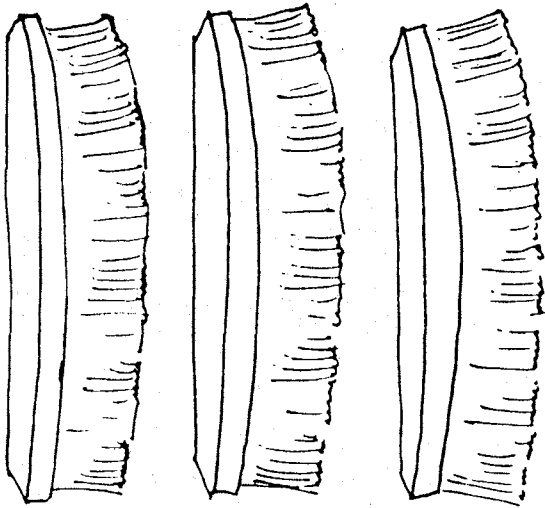
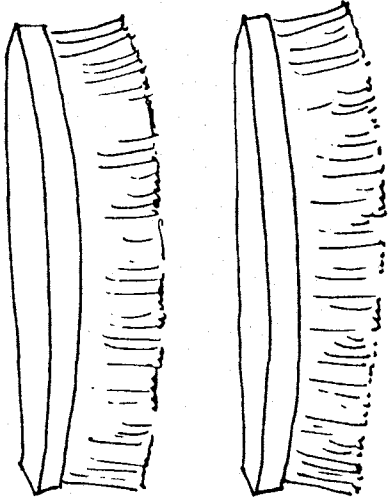
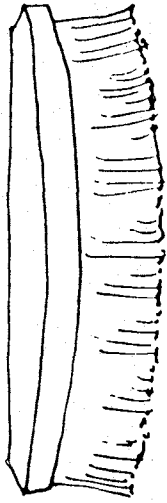
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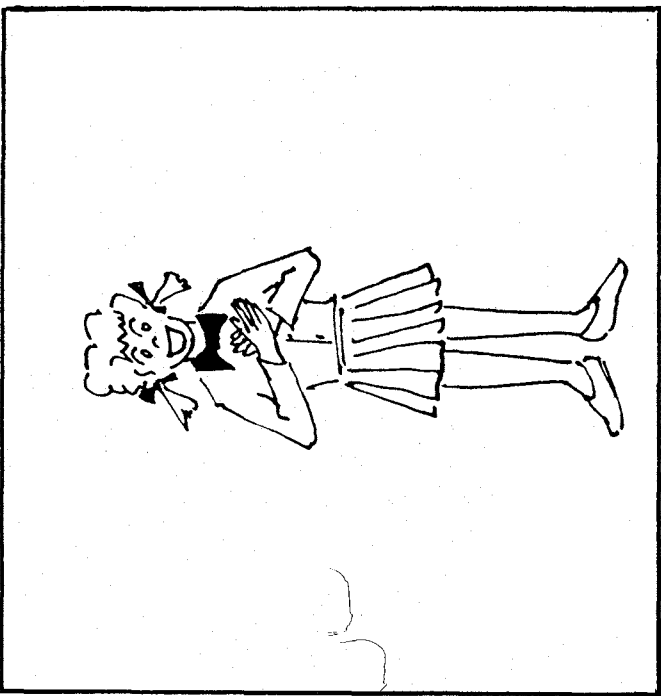
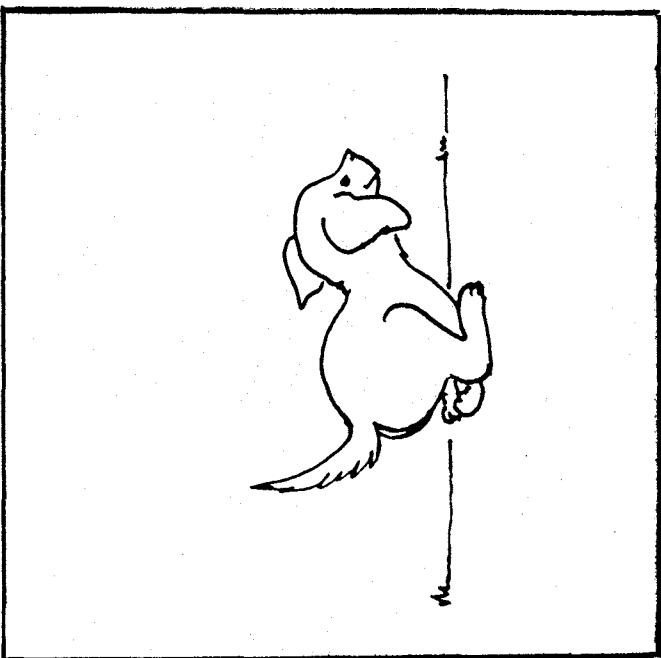
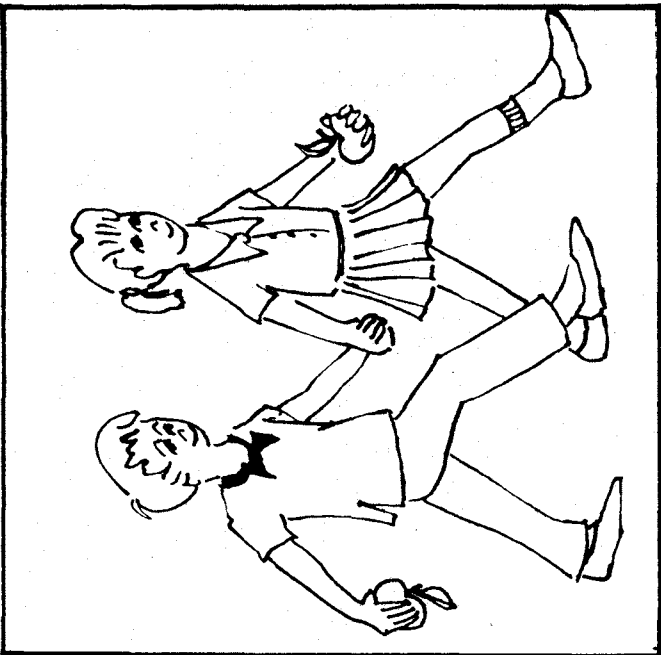
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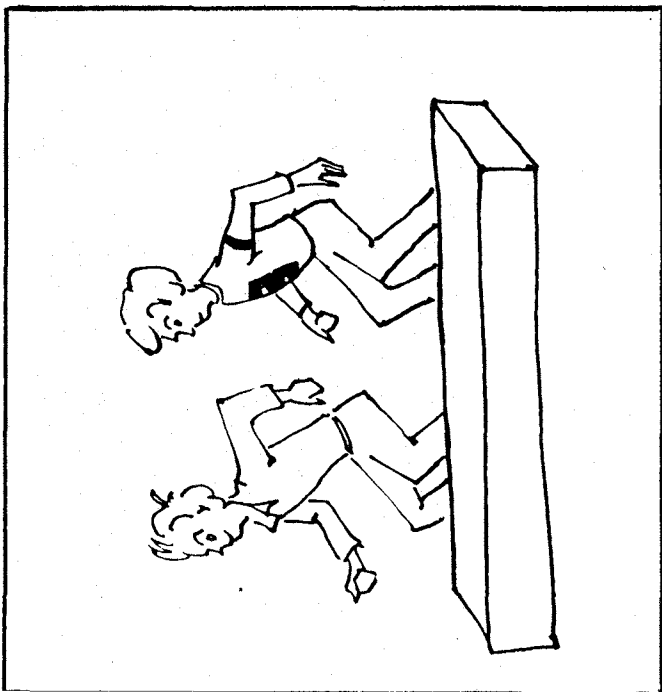
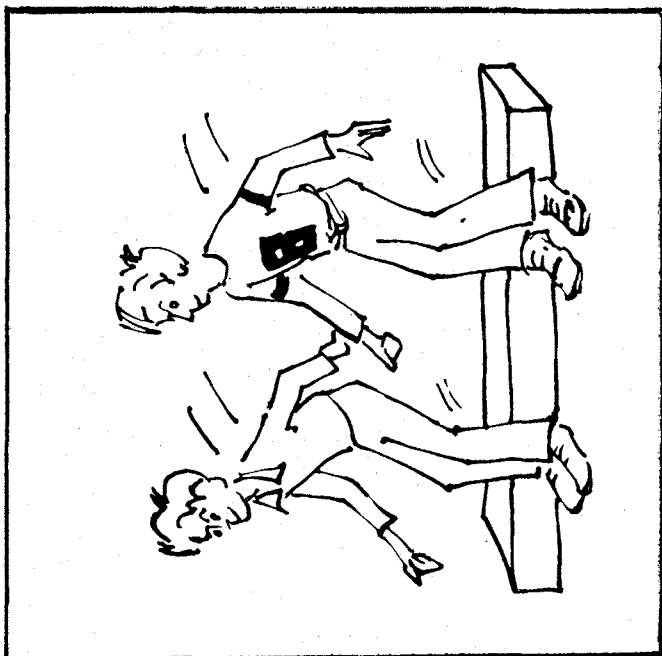
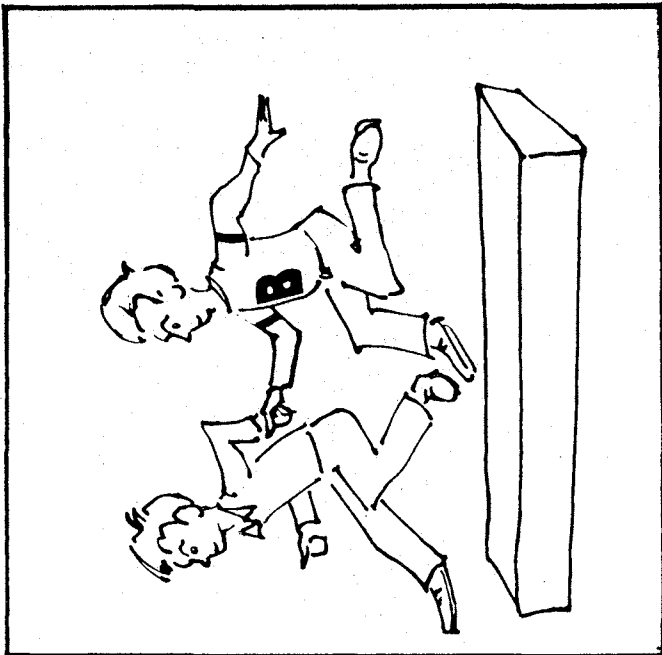
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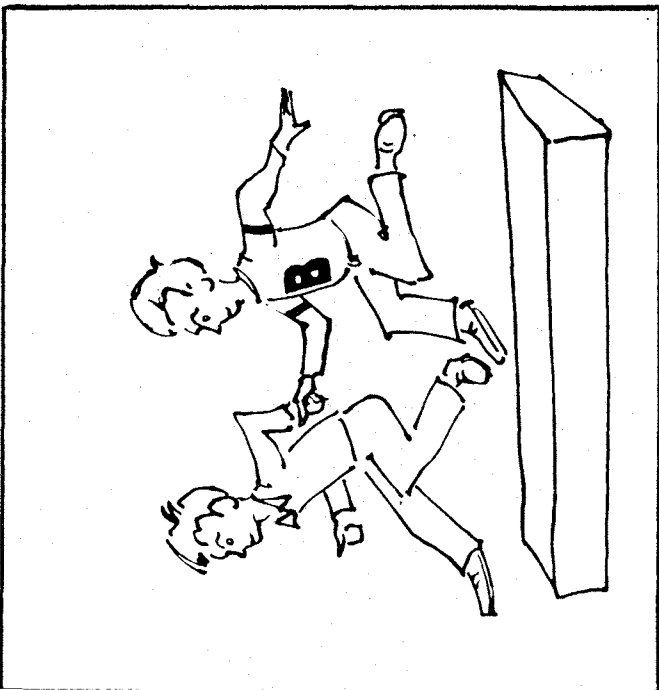
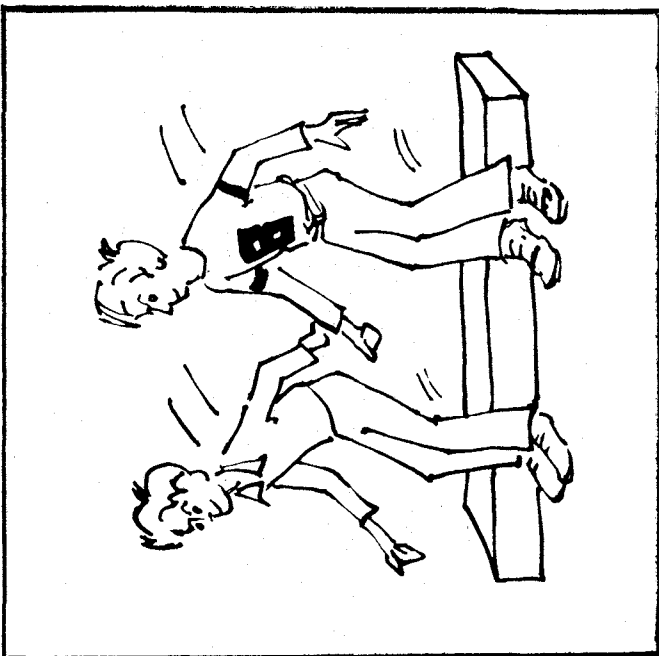
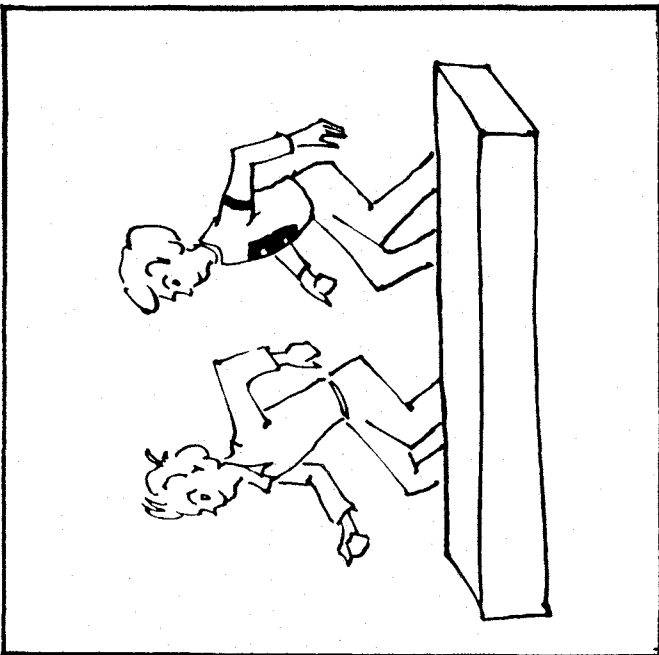
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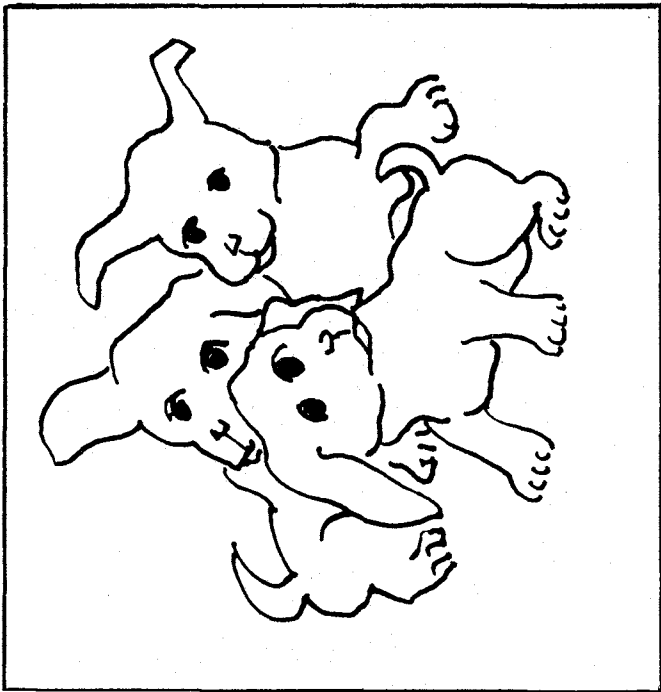
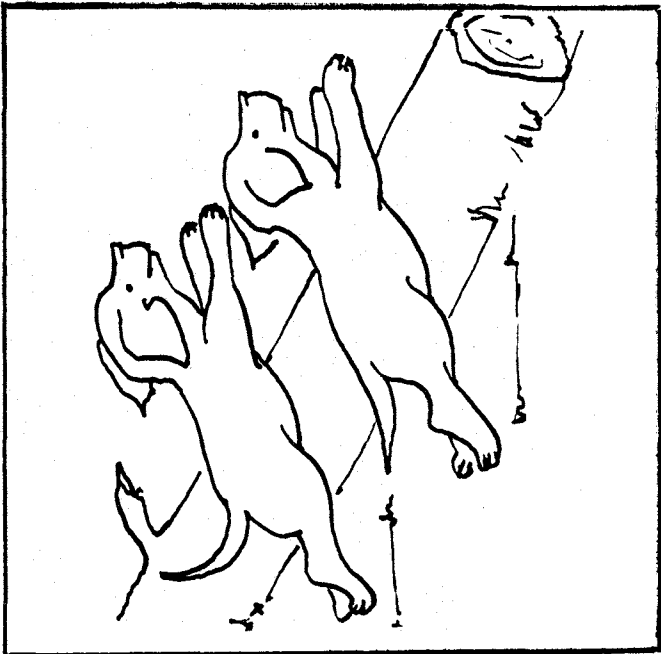
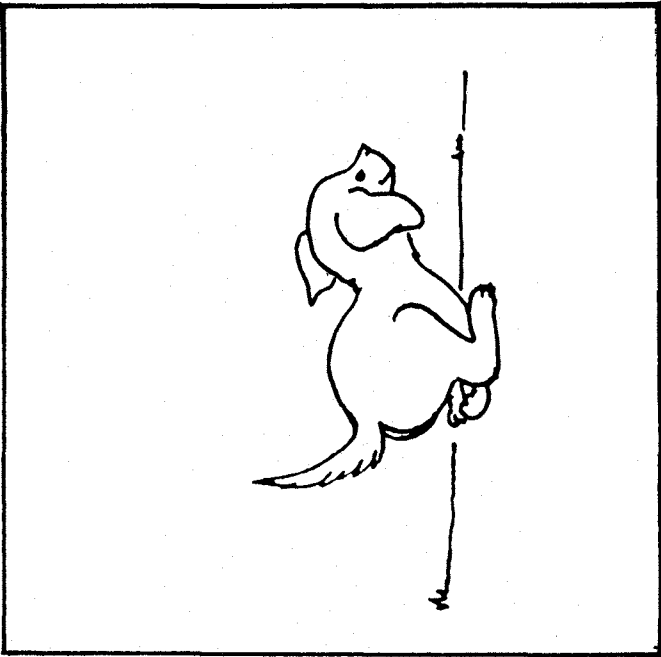
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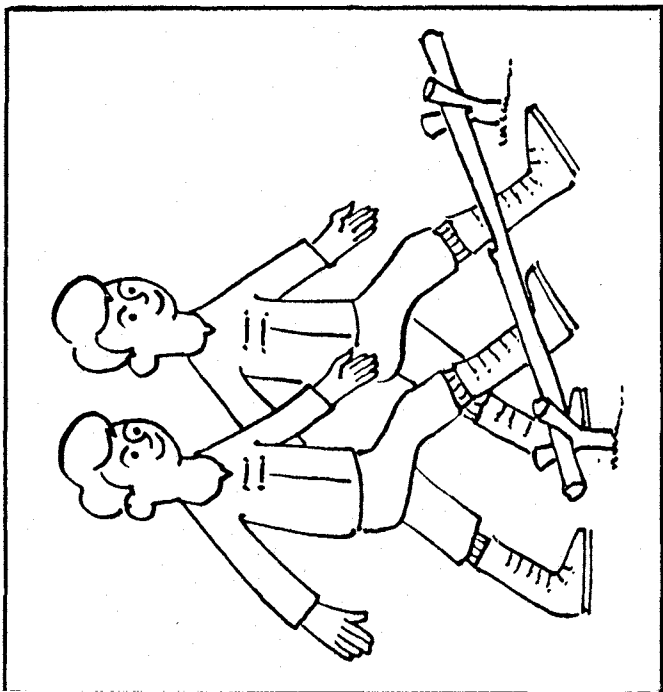
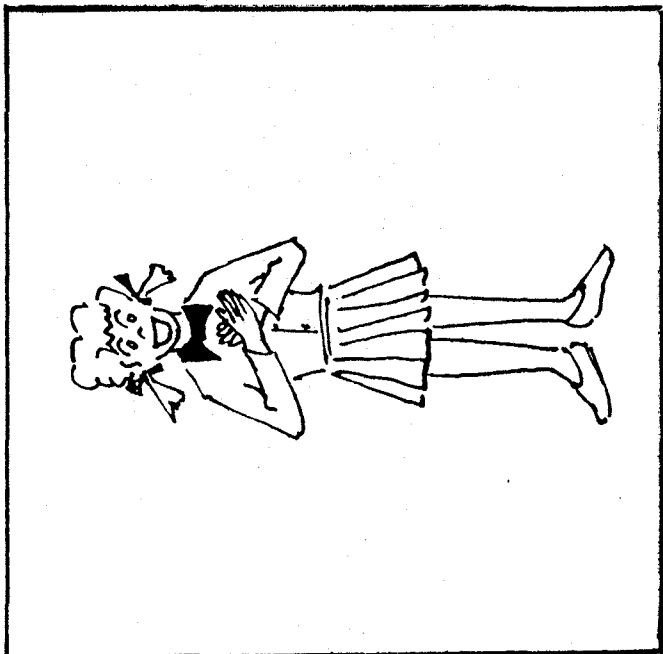
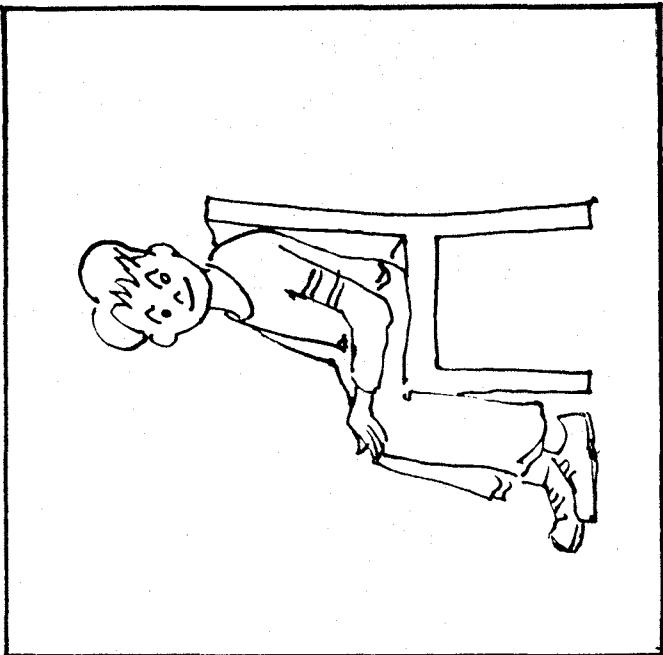
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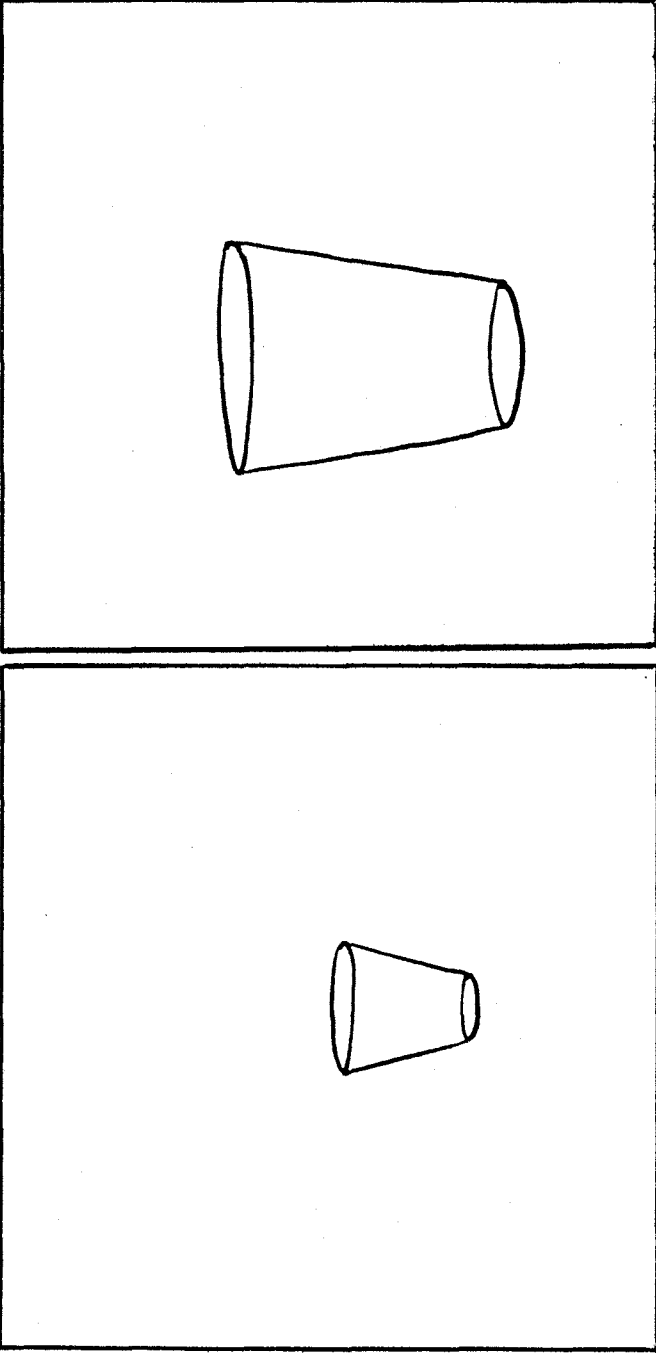
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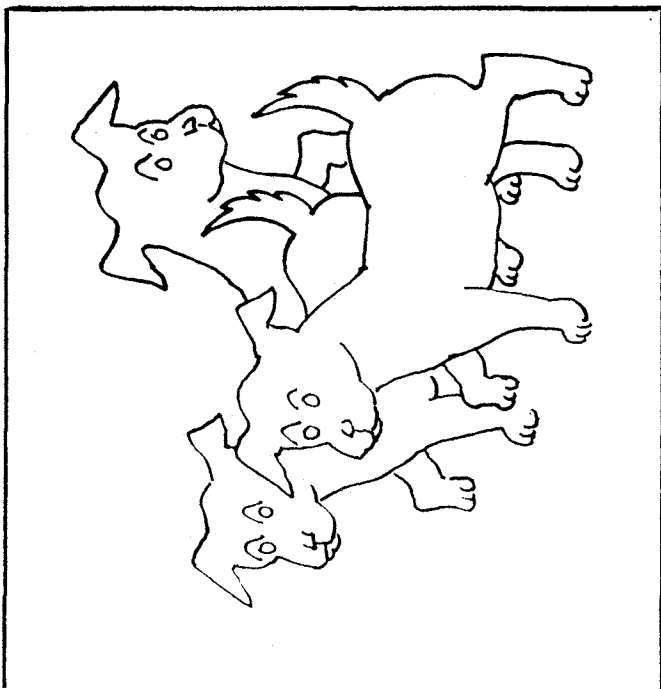
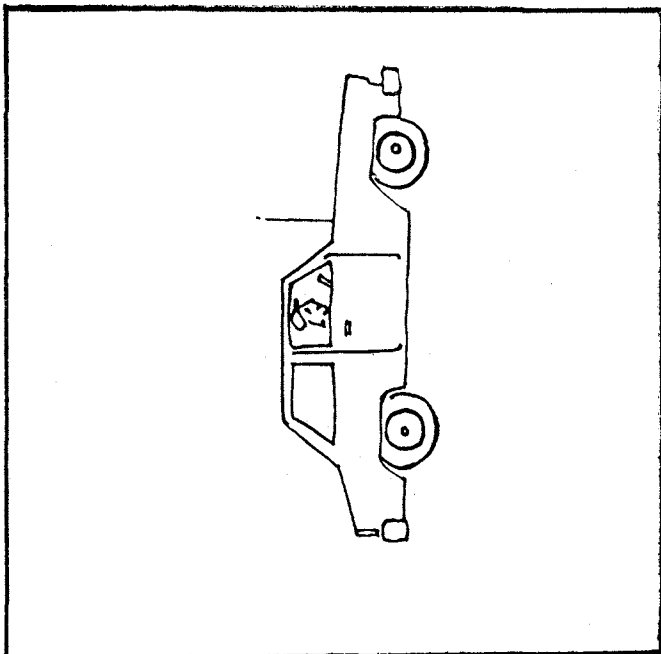
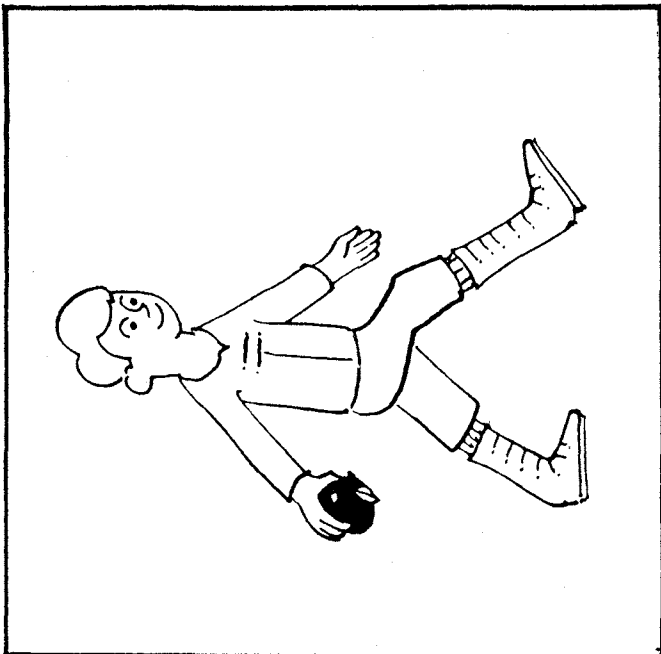
he



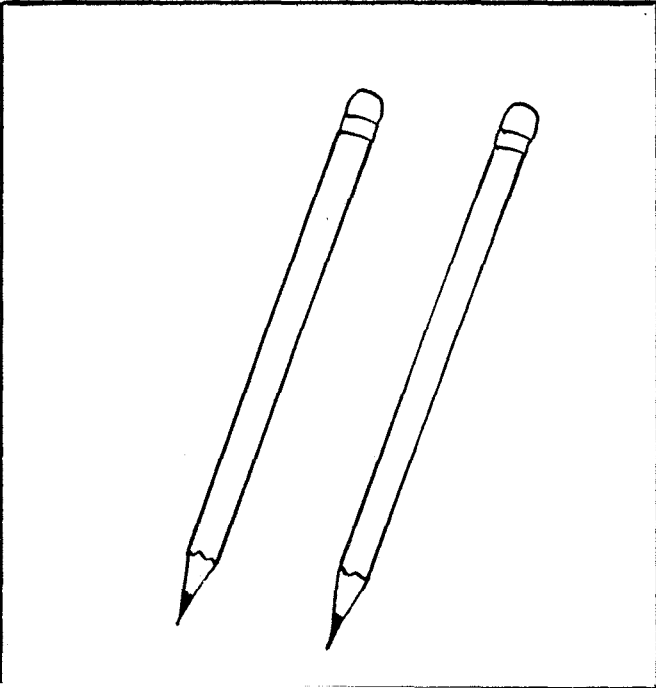
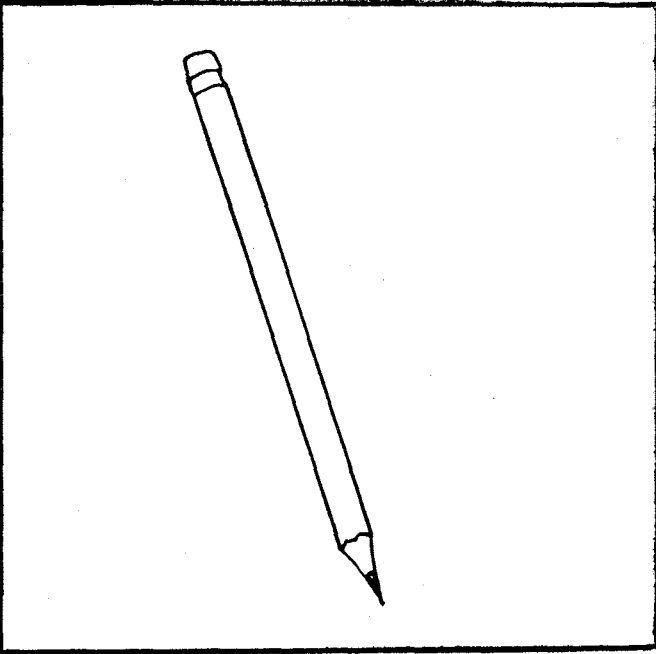
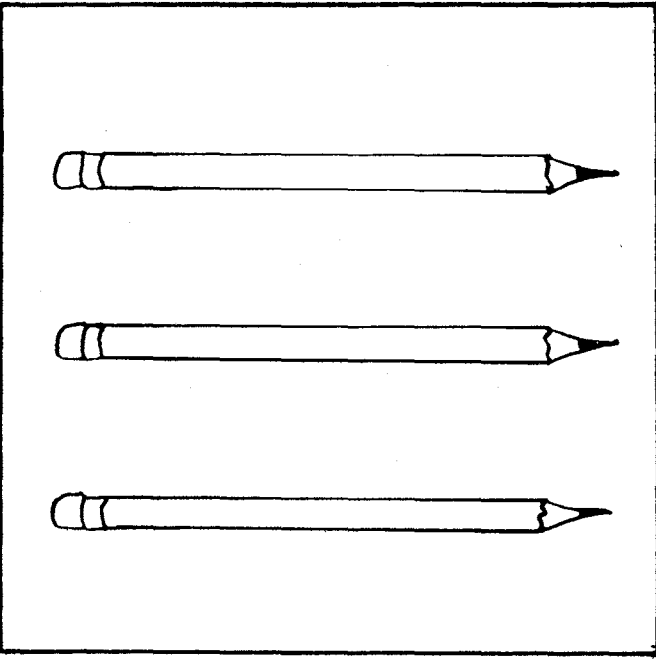
smaller

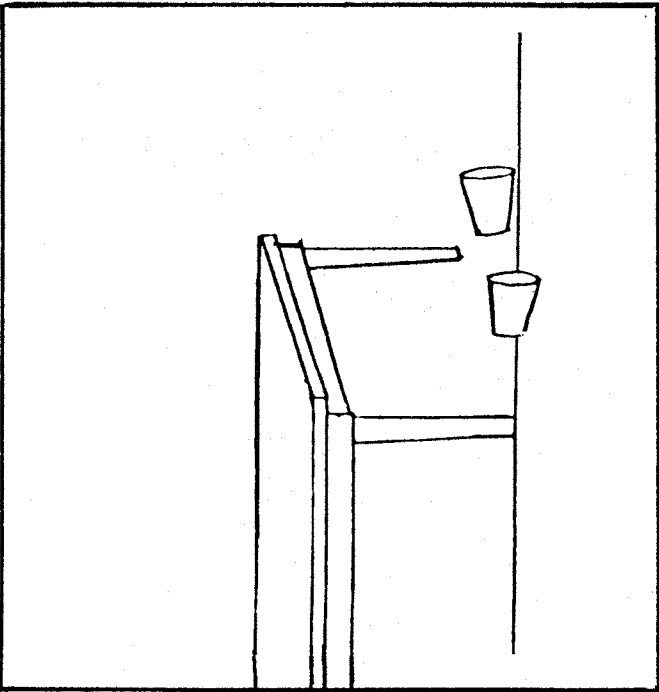
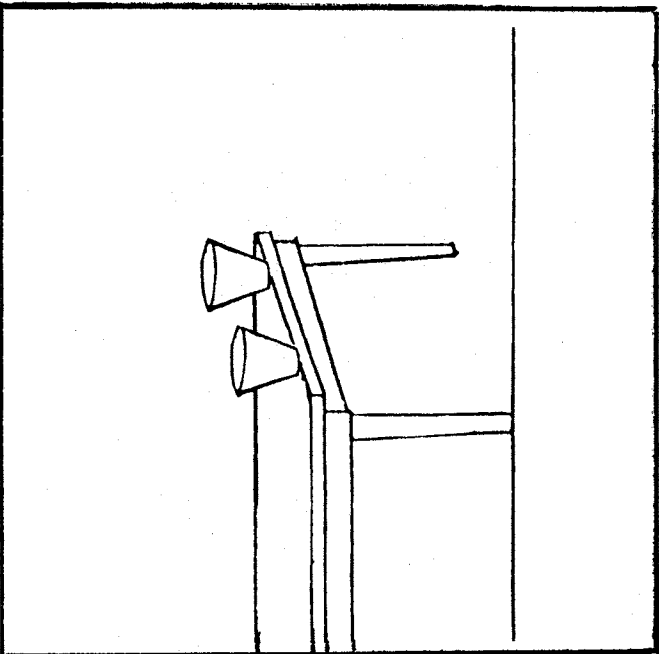
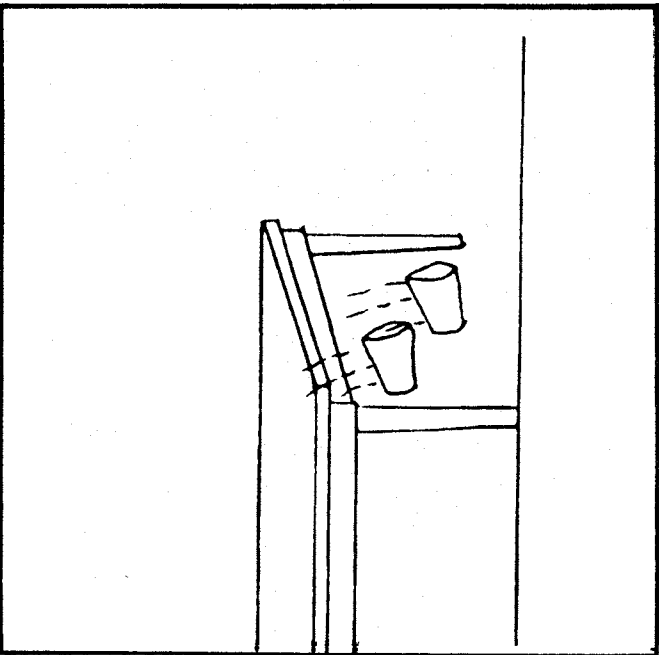


them



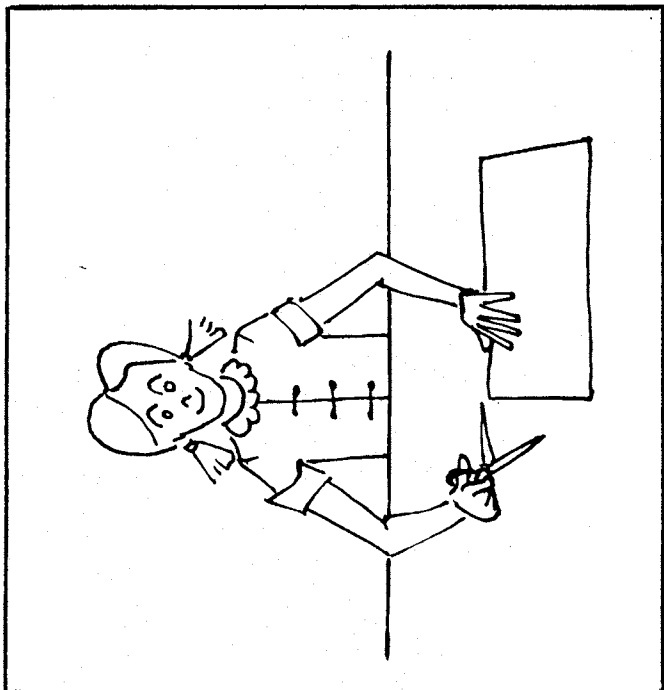
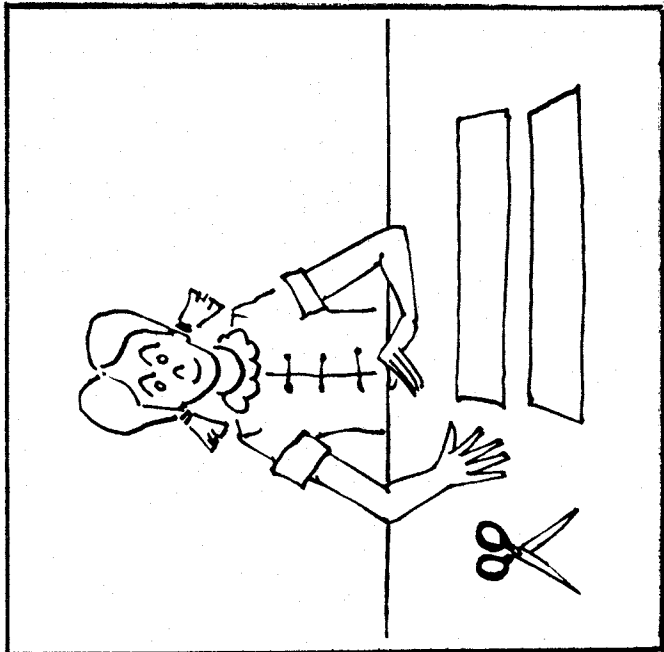
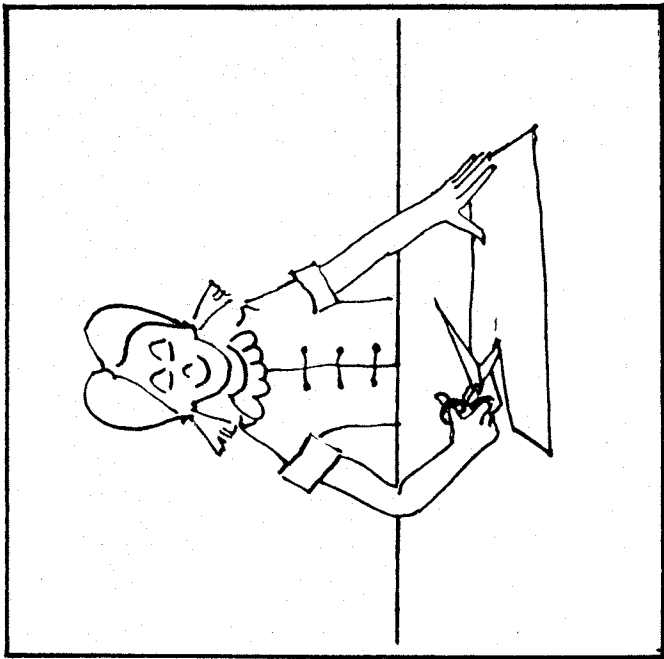
pencil



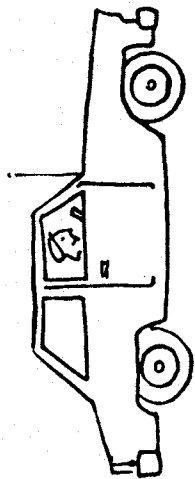
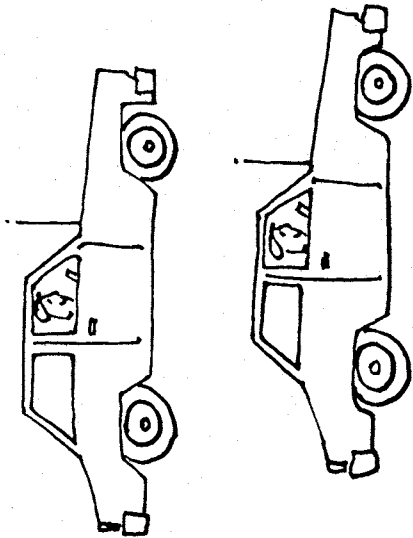
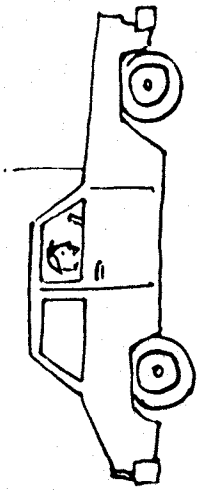


fell

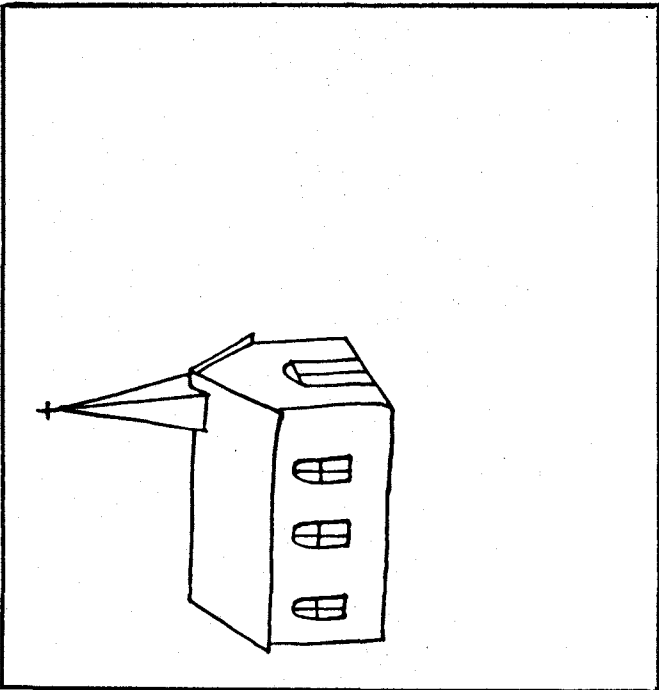
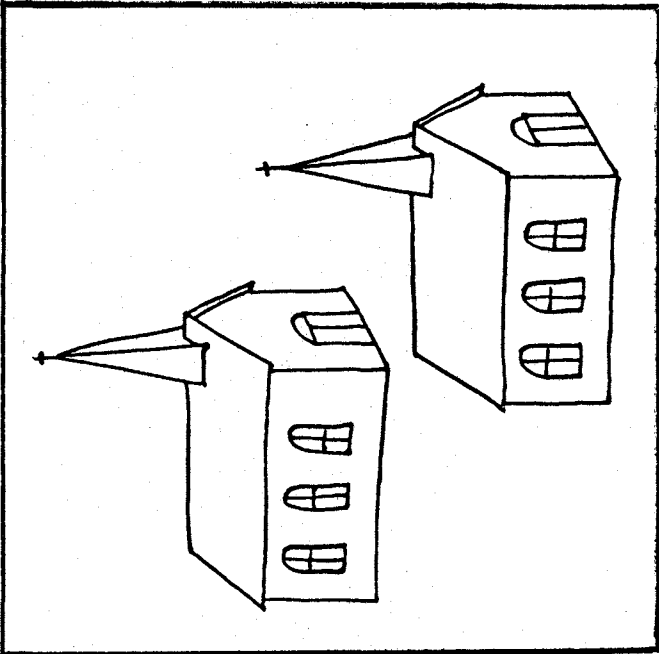
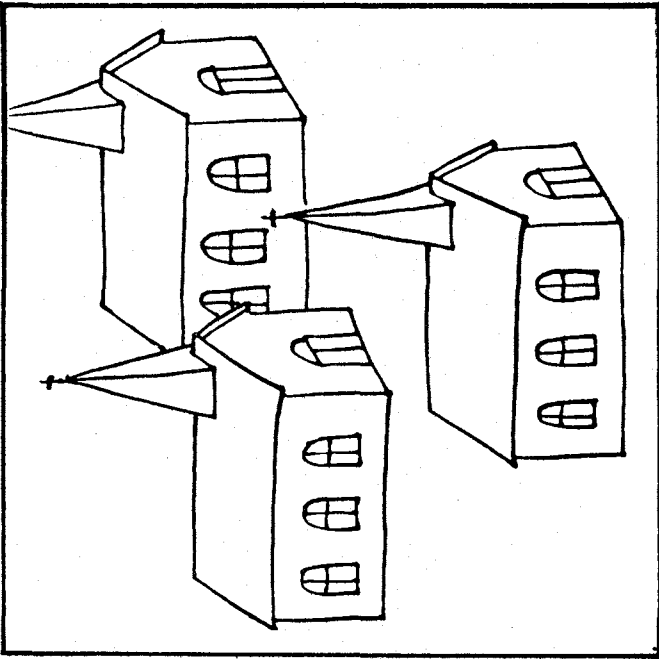
cut

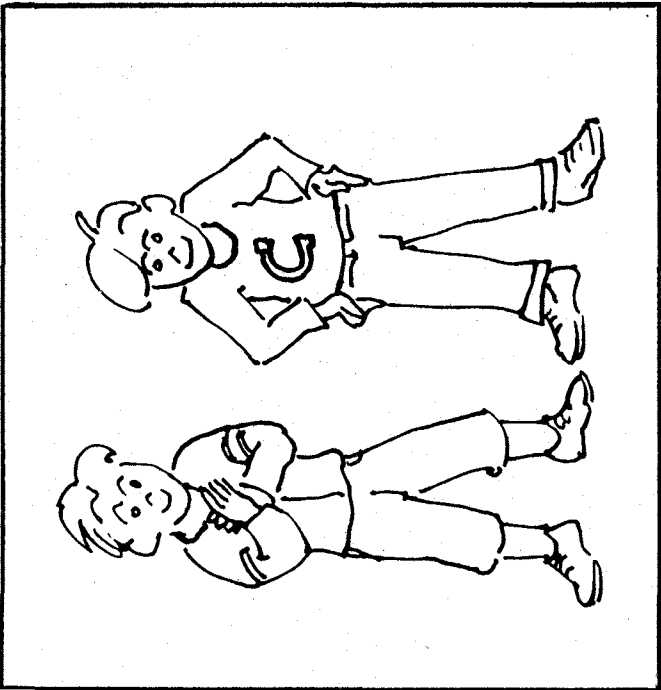
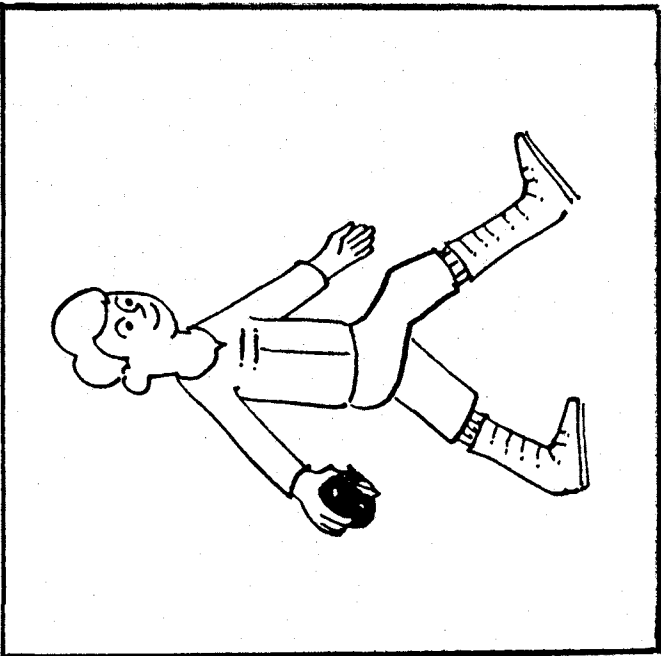
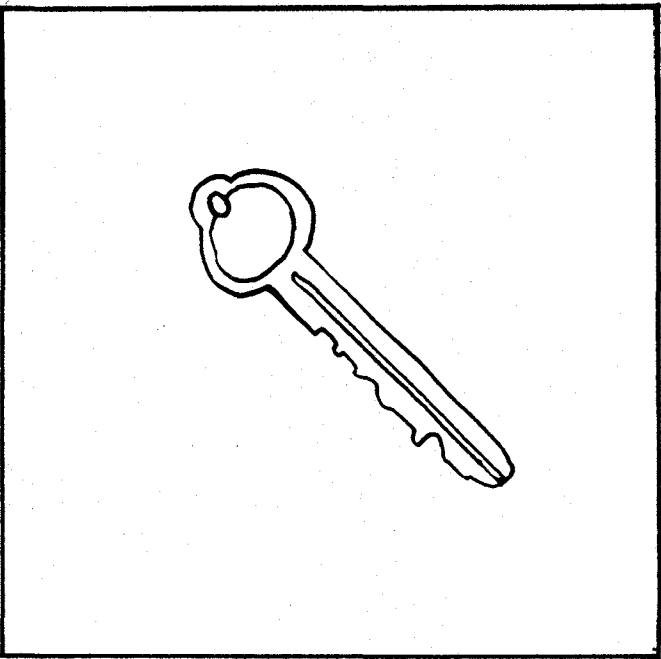


cars



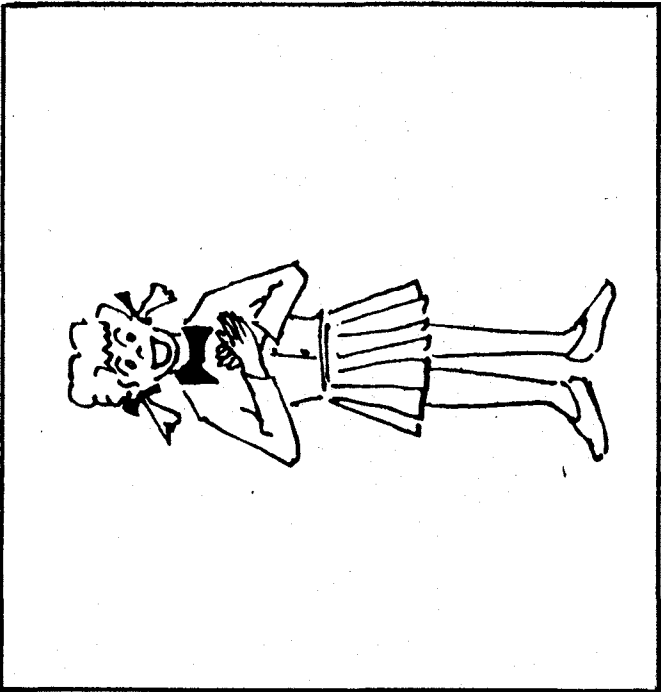
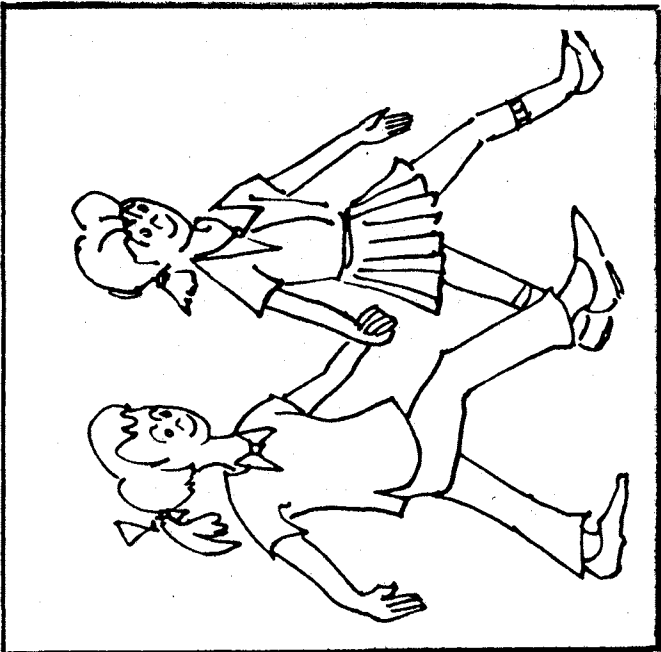
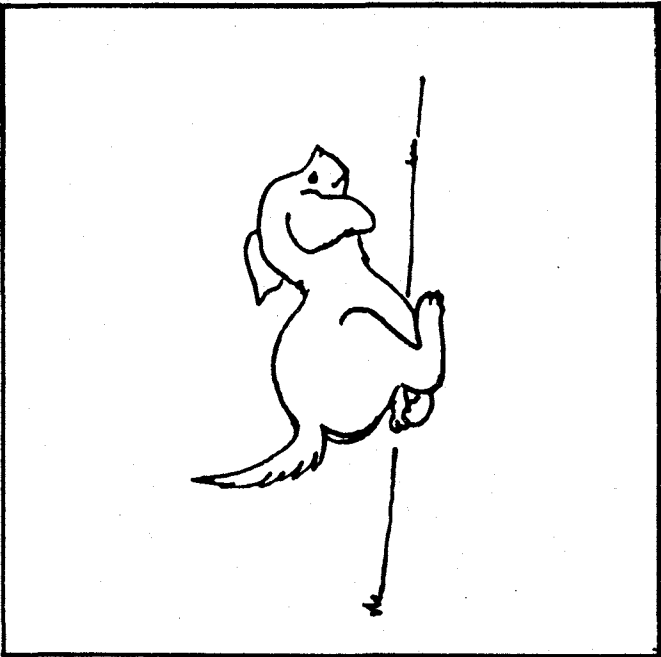
church



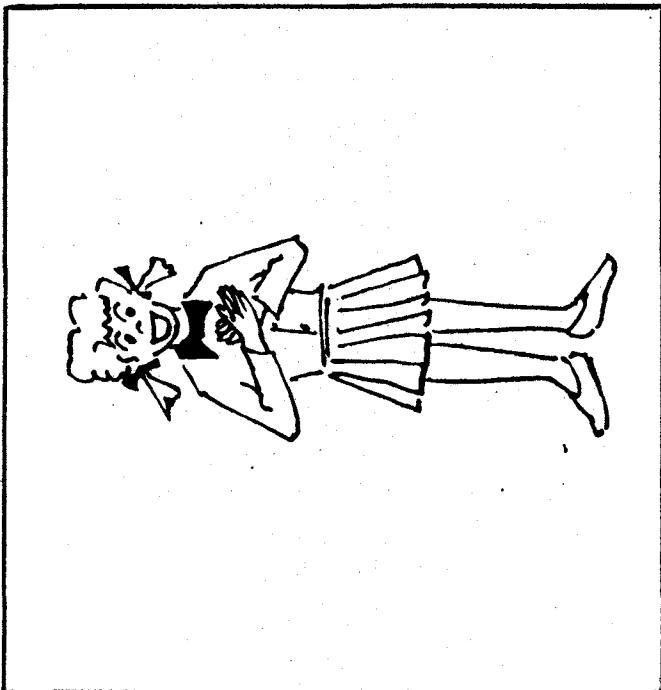
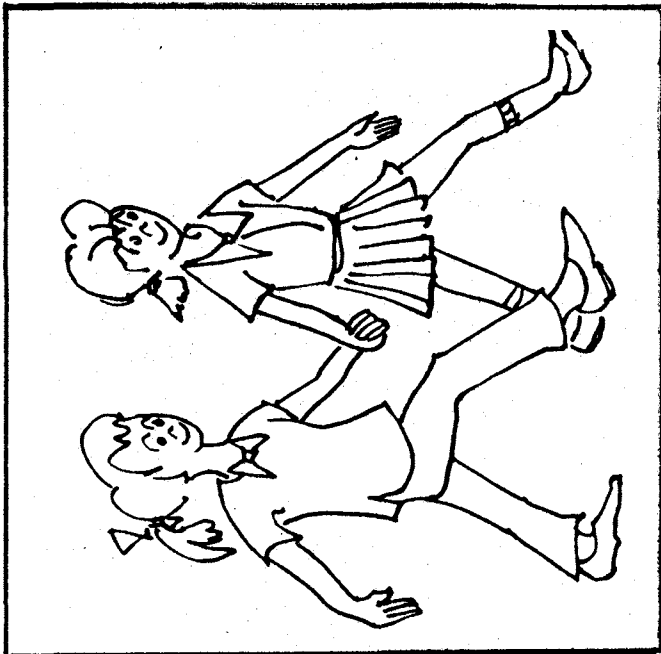
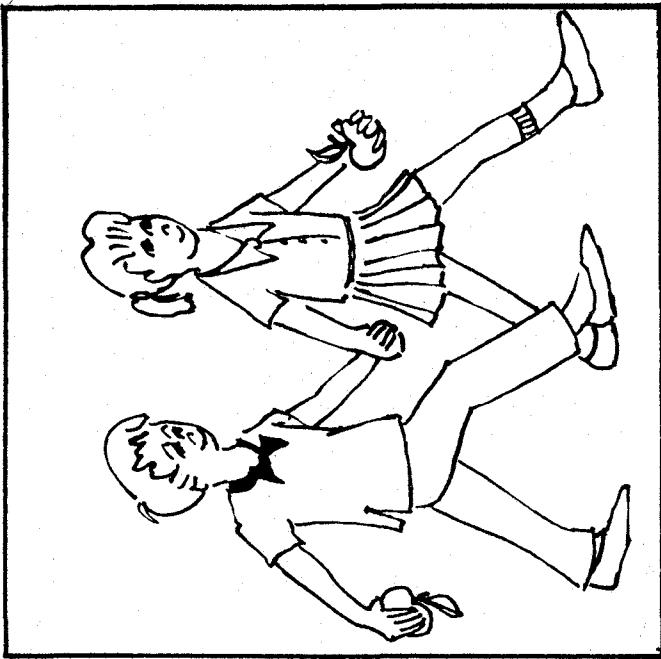


him

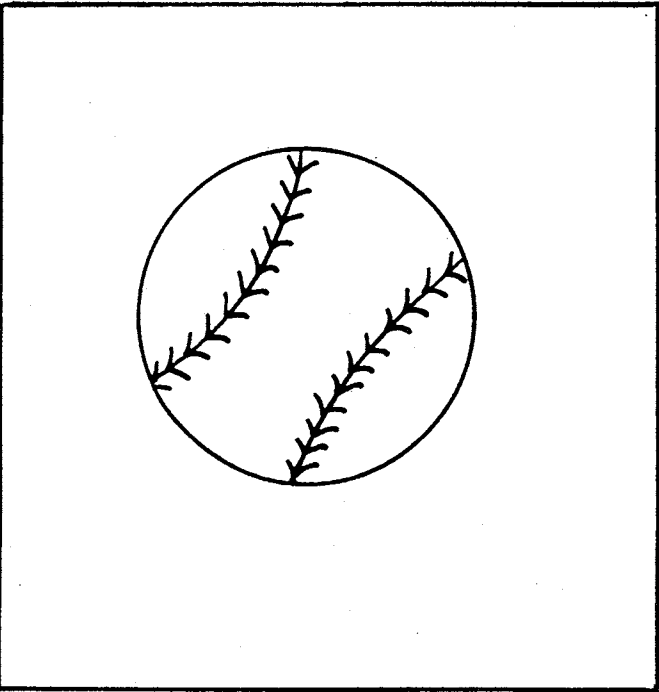
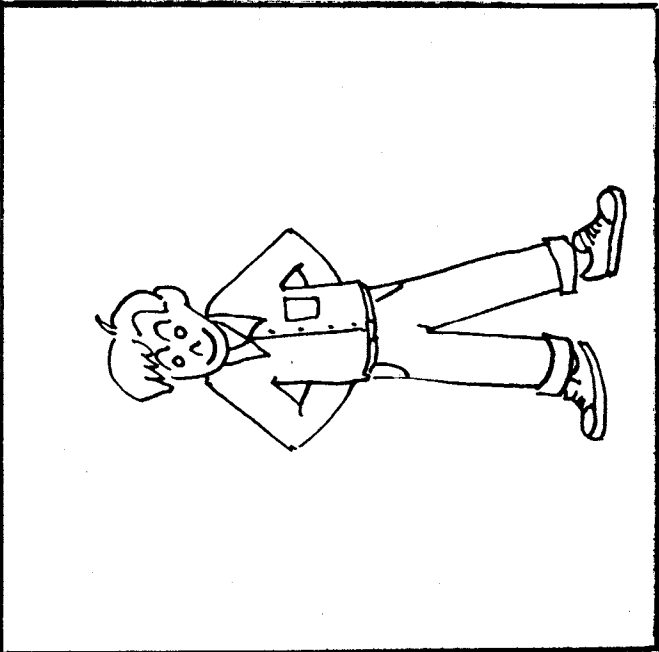
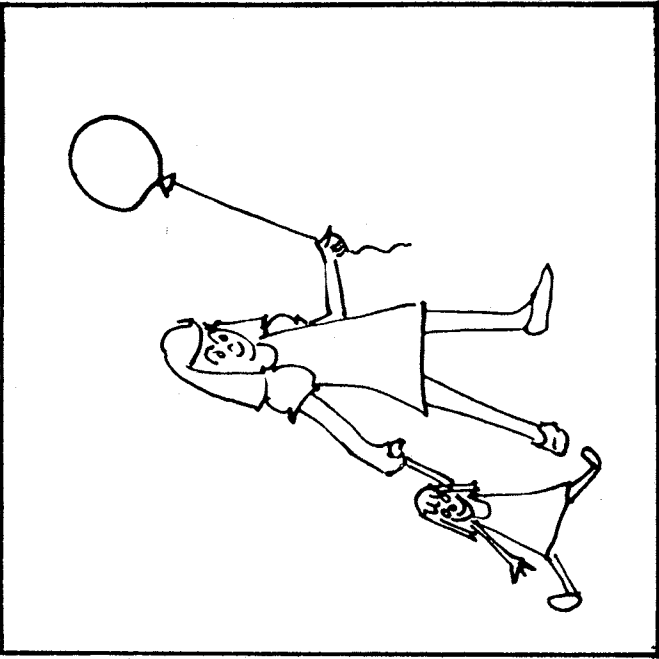
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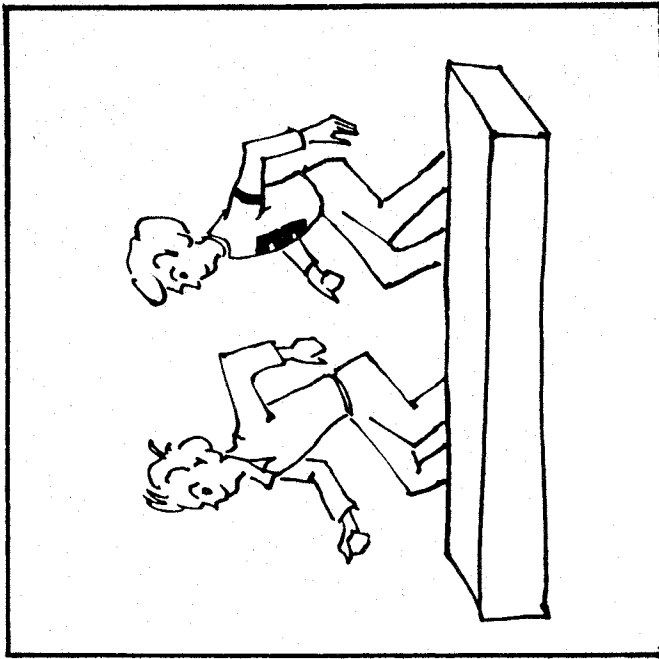
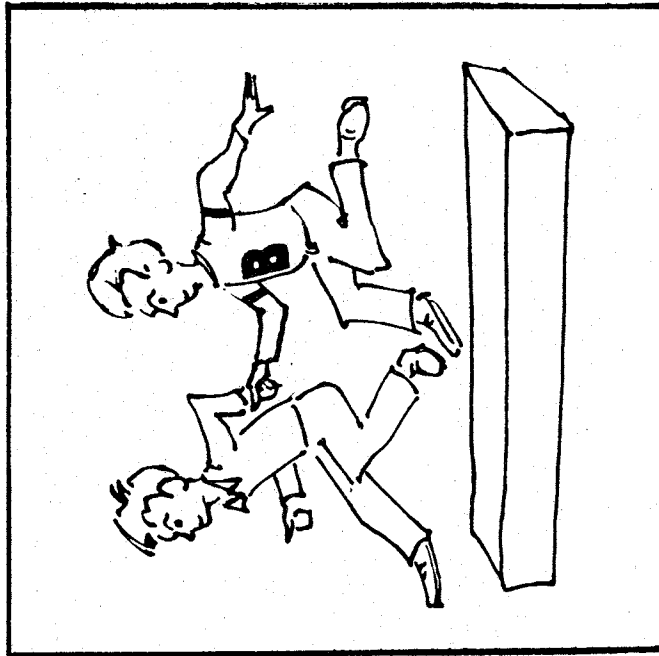
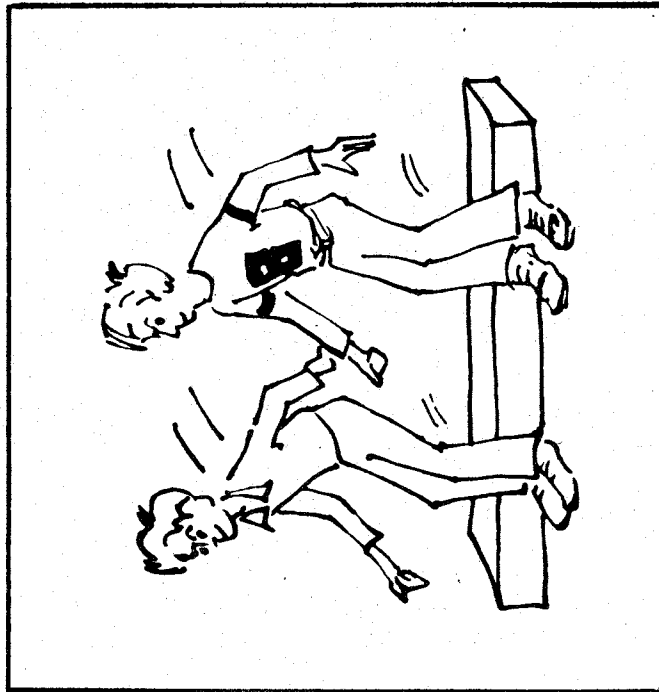


girls



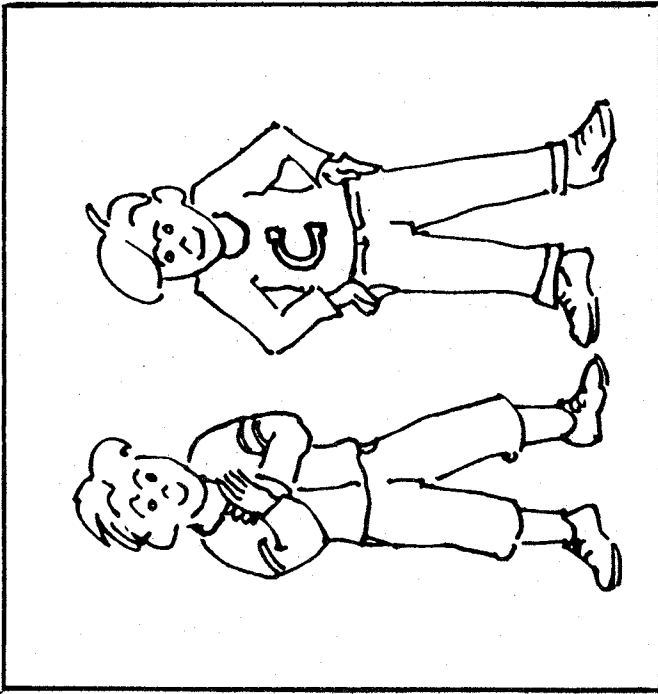
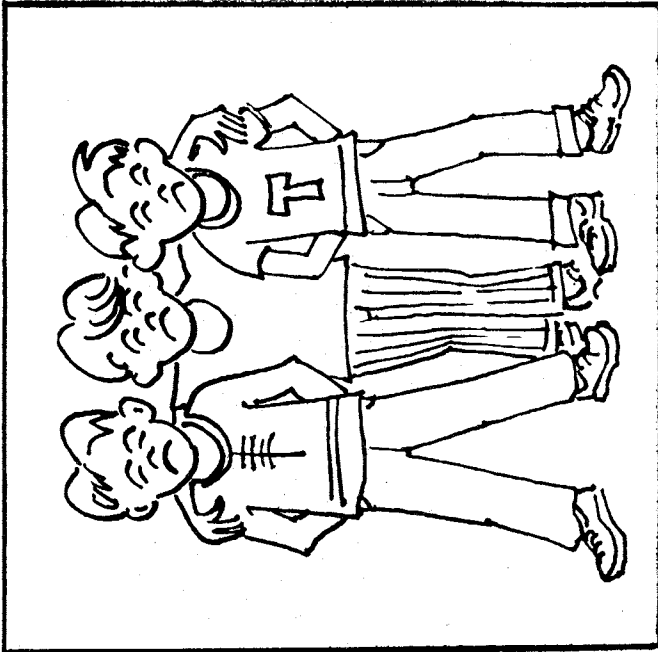
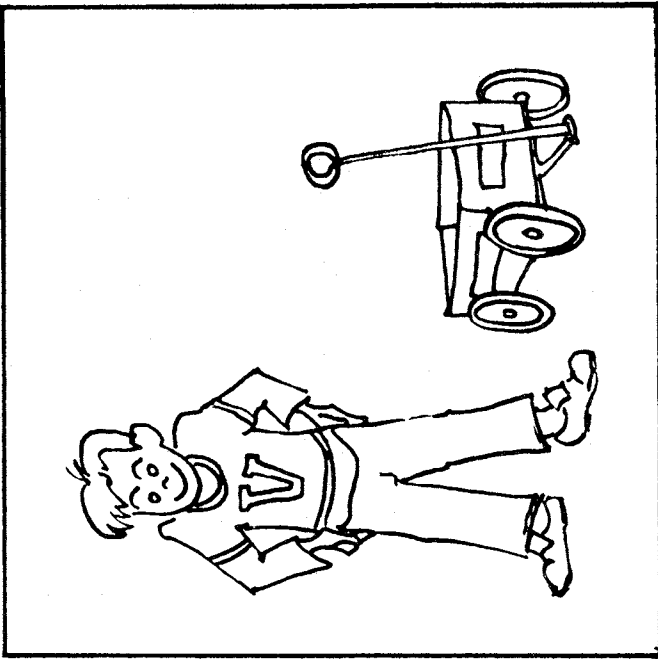
she



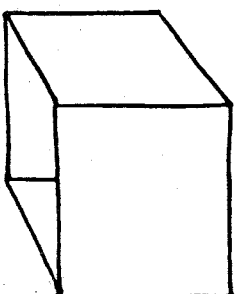
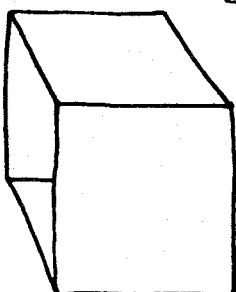
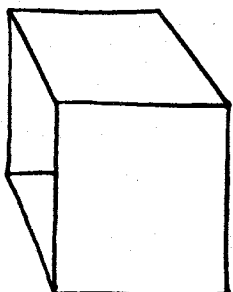
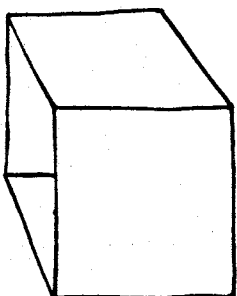
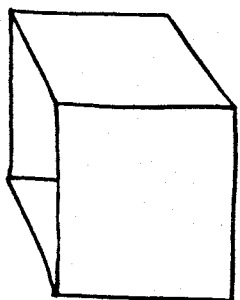


are jumping

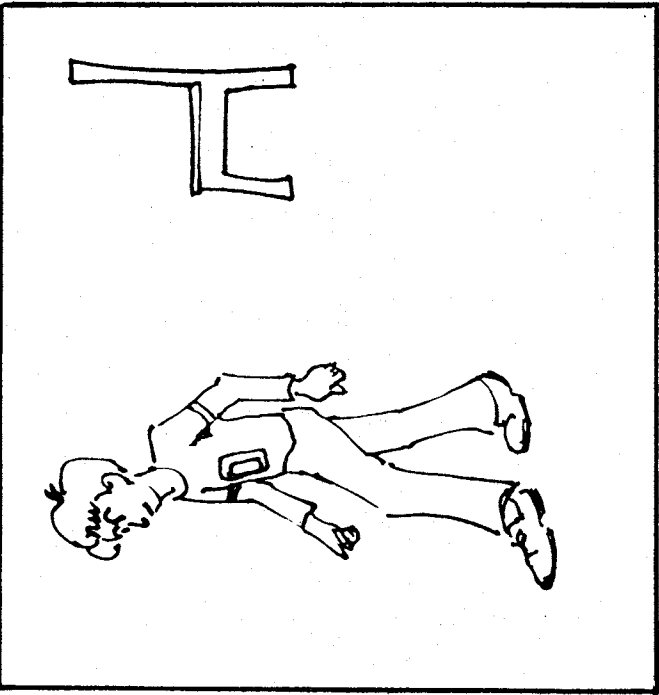
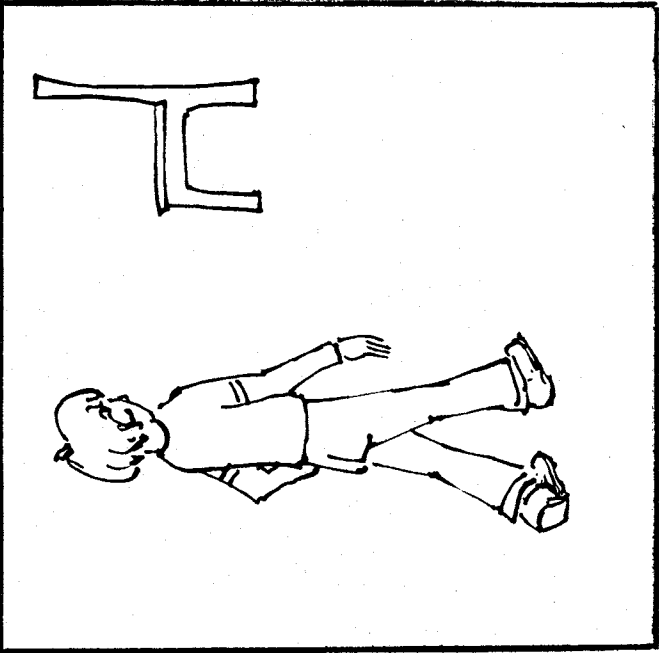
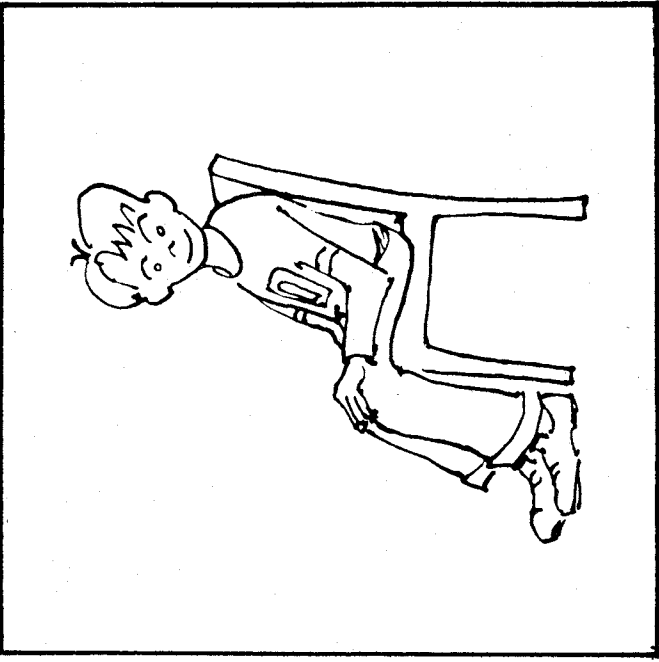
boy



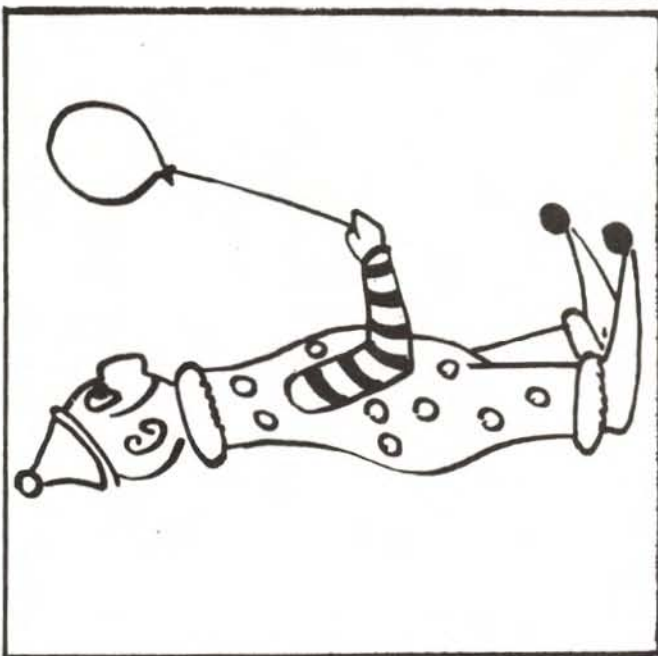
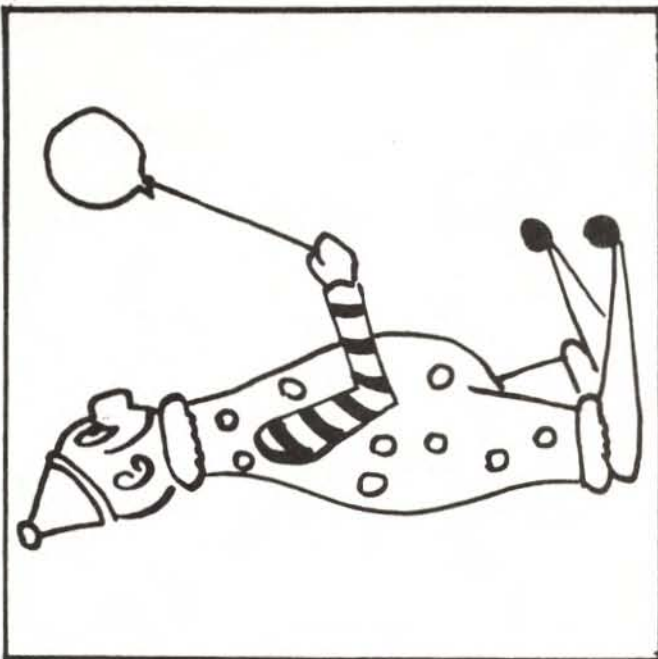
boxes



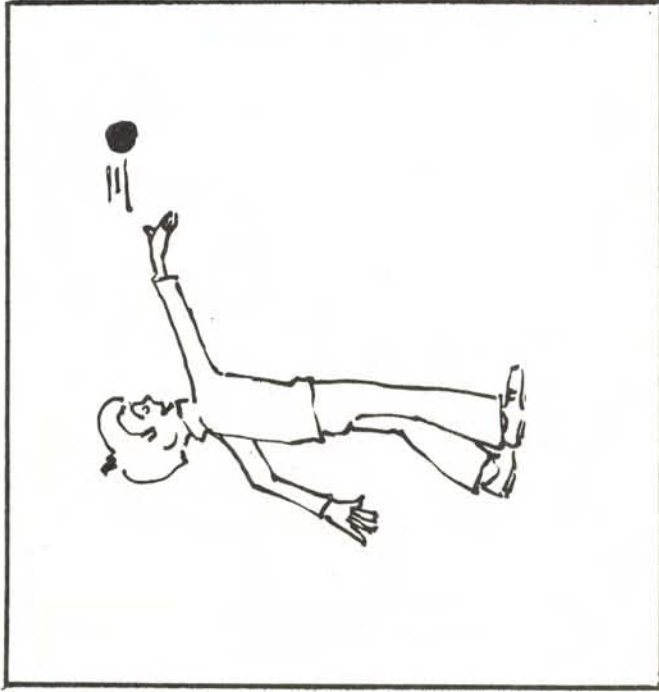
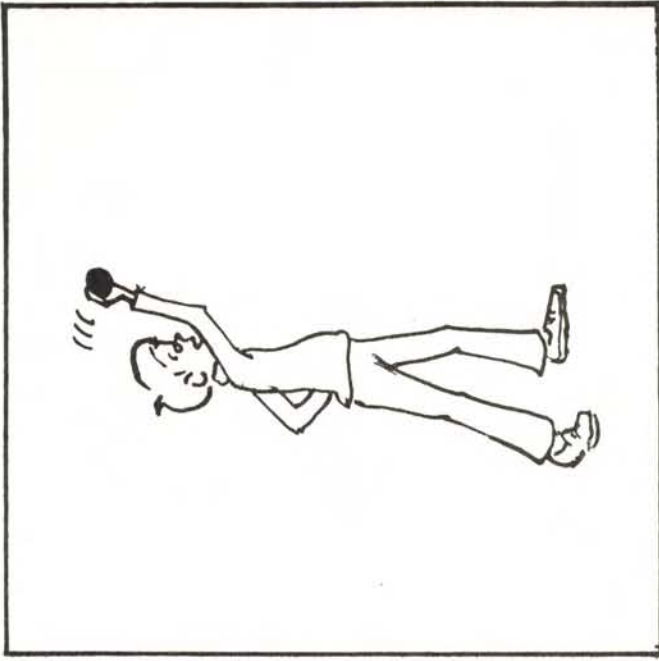
is sitting



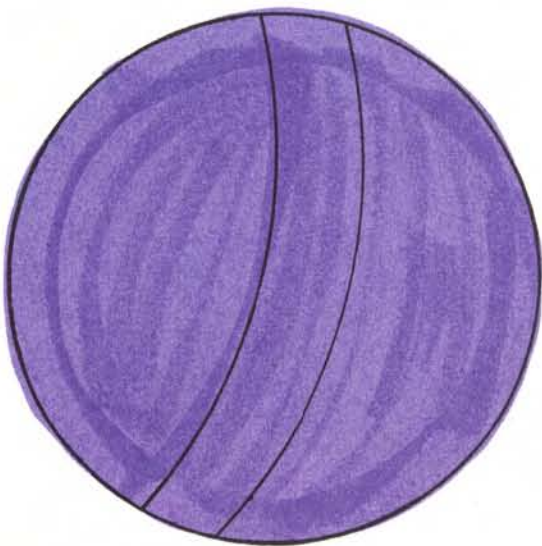
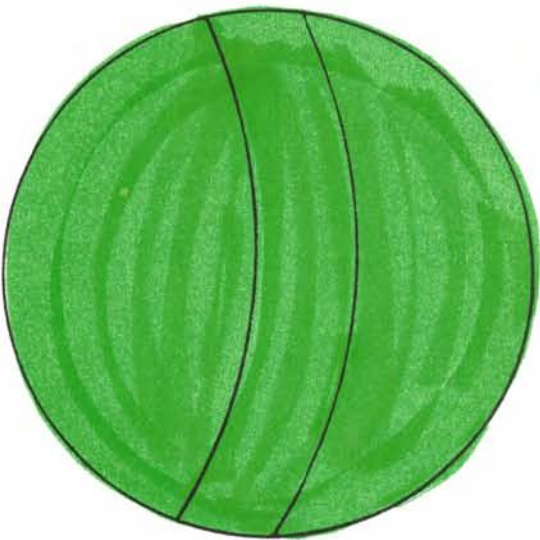
fattest



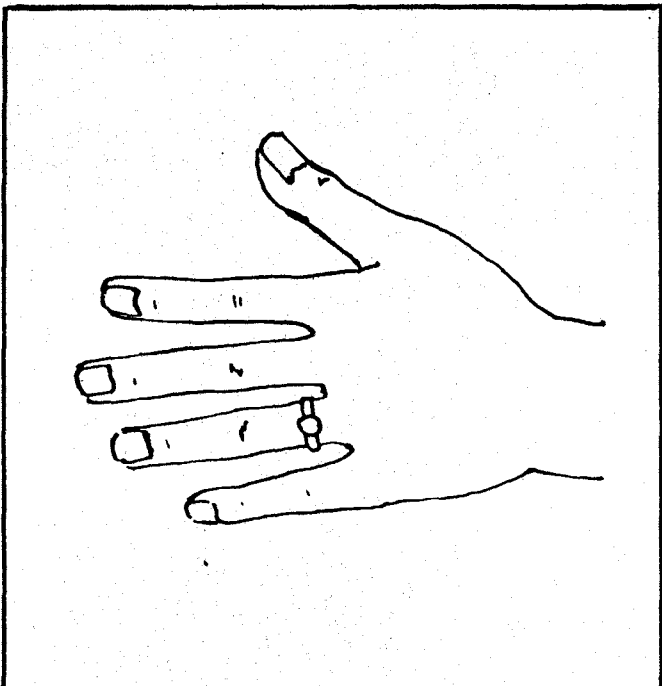
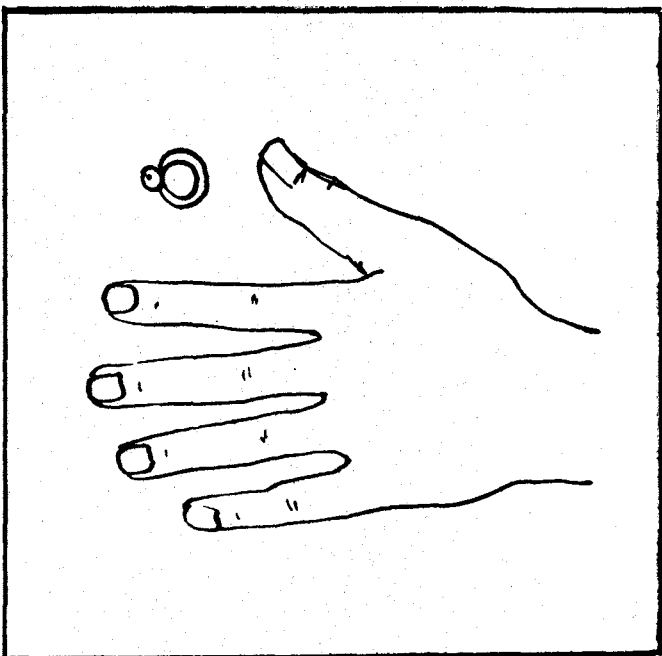
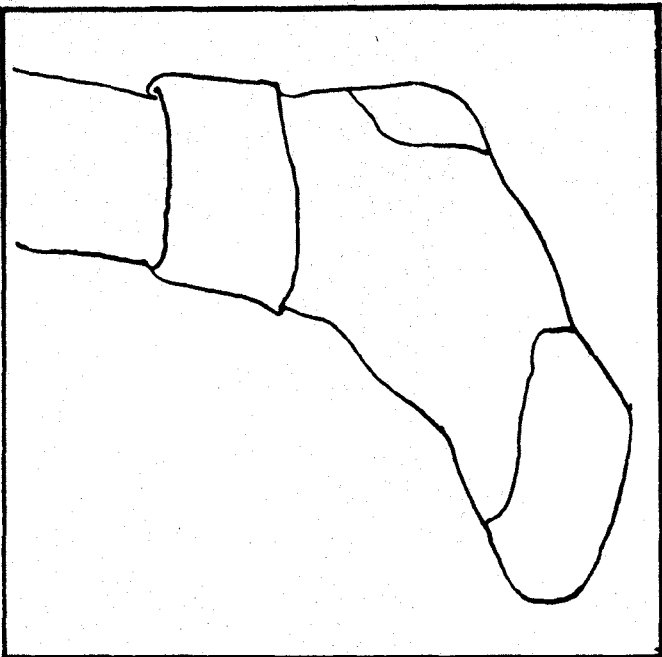
will throw



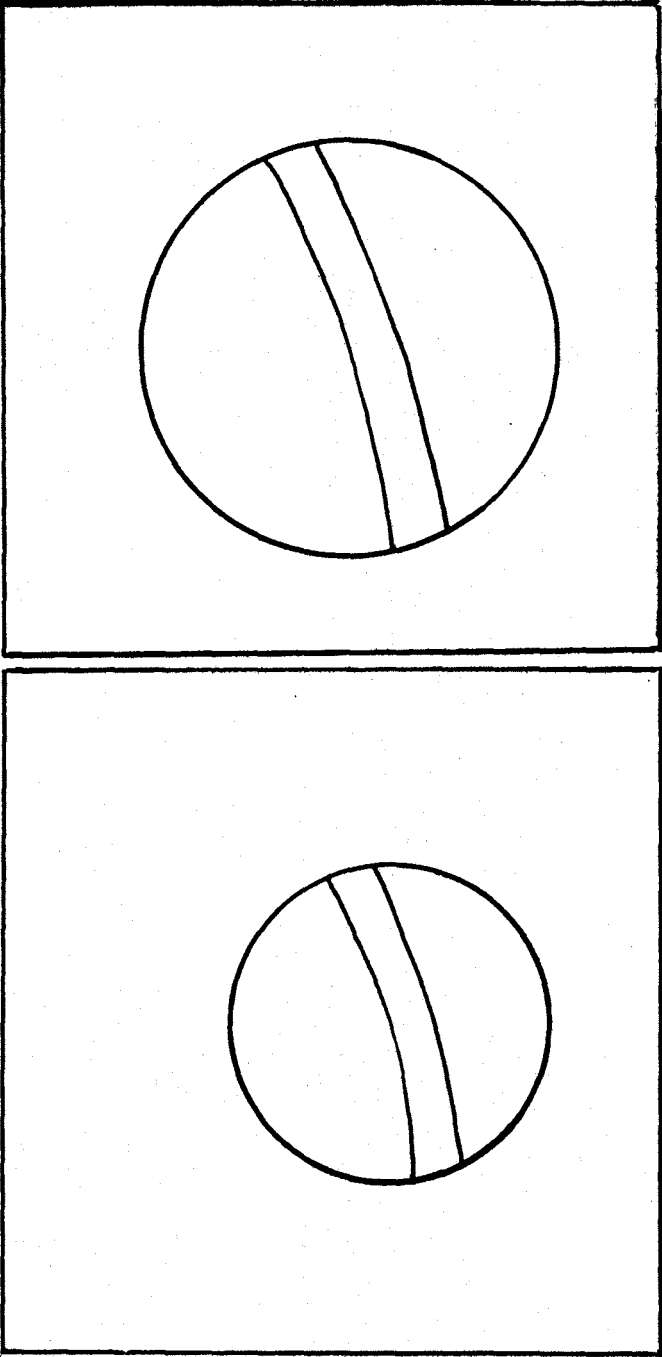
purple



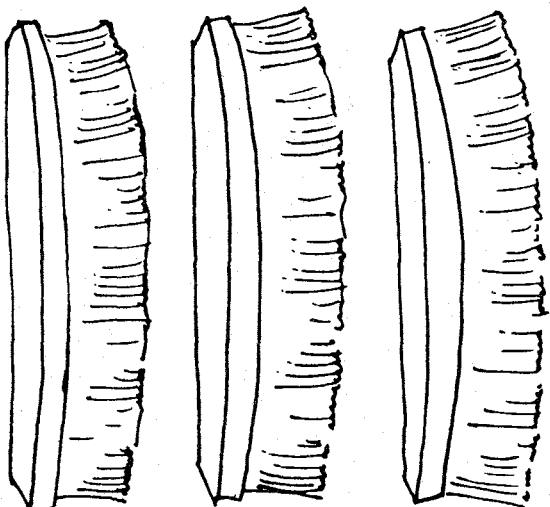
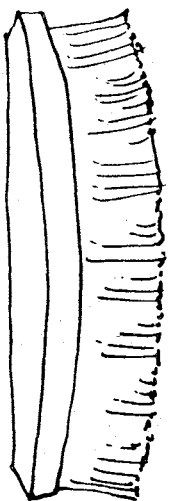
off



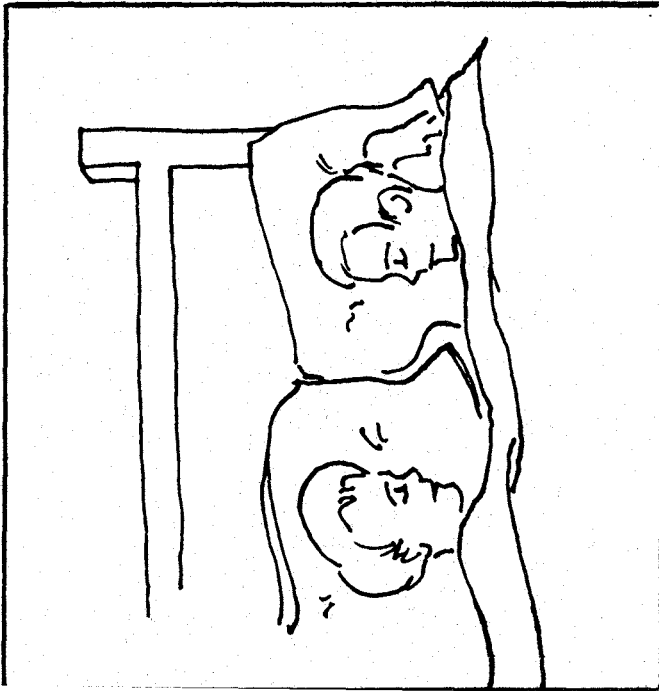
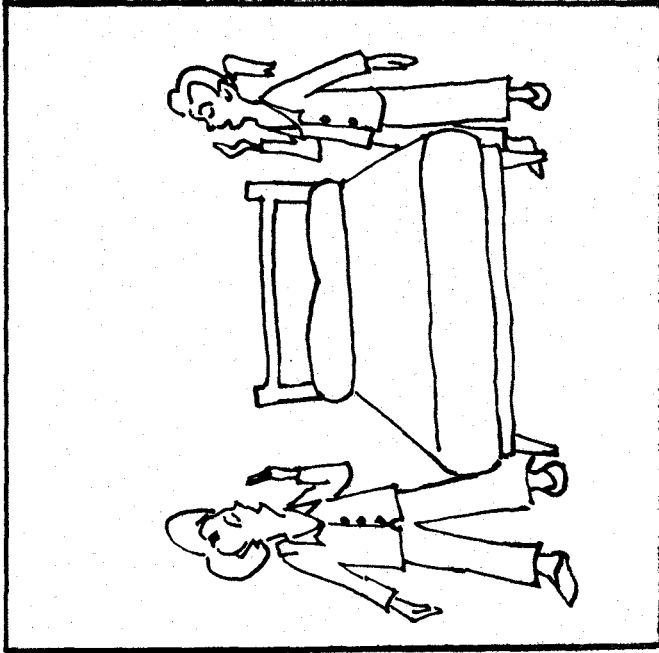
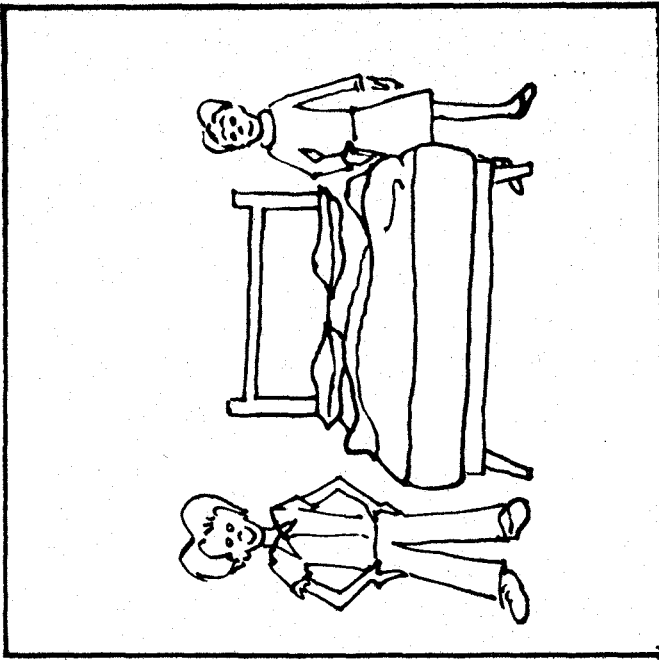
bigger



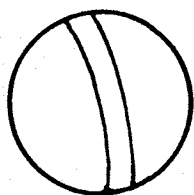
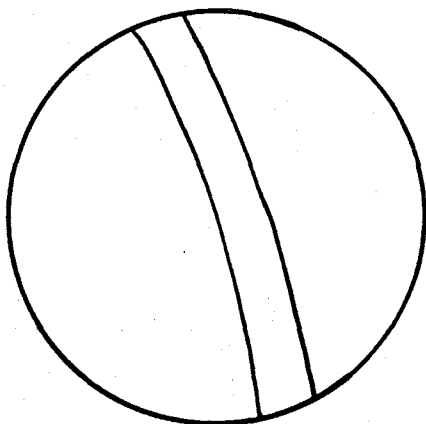
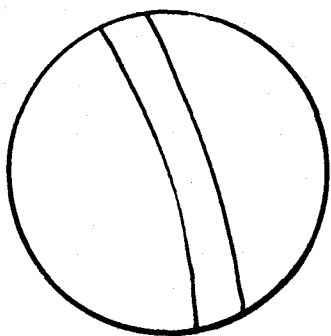
brushes



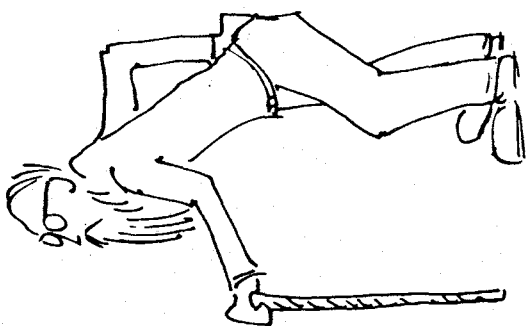
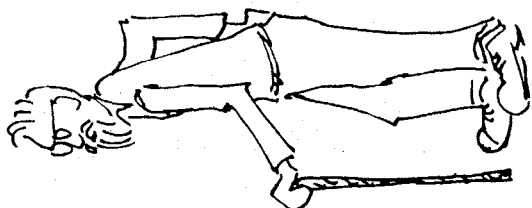
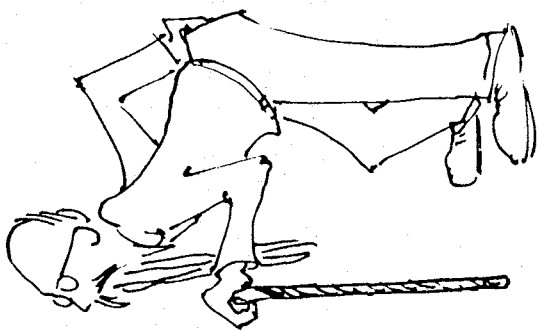
are sleeping



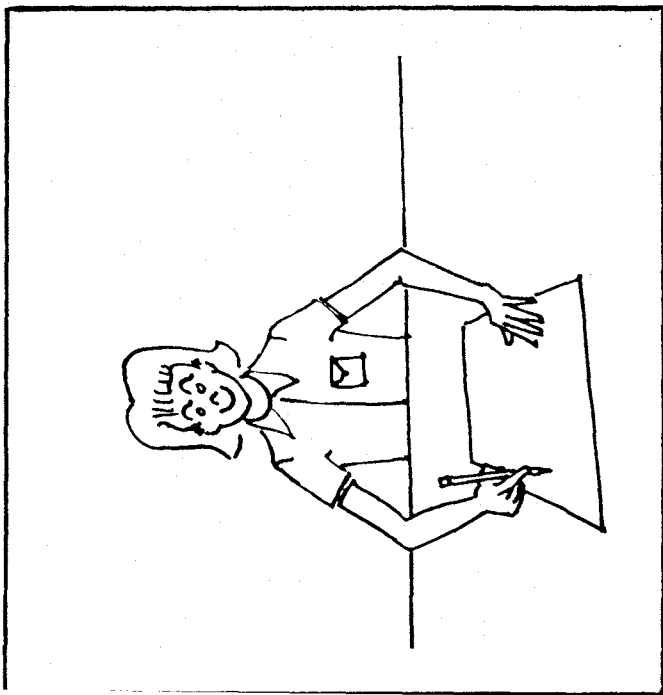
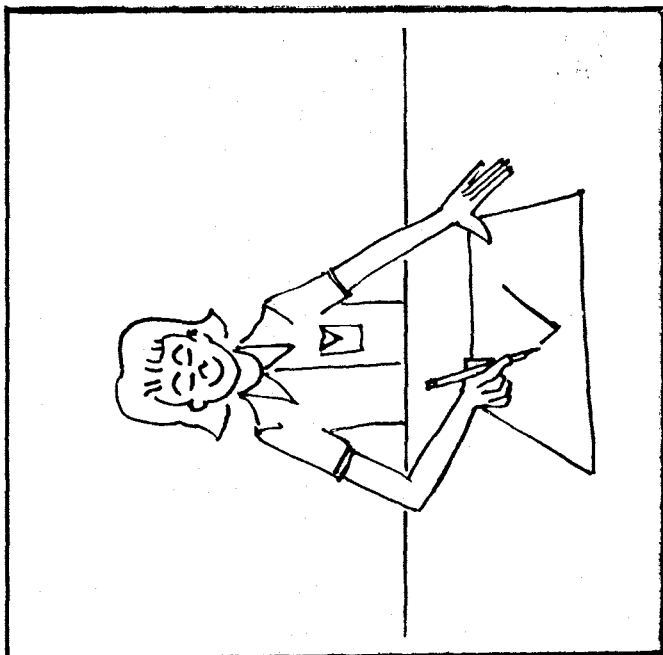
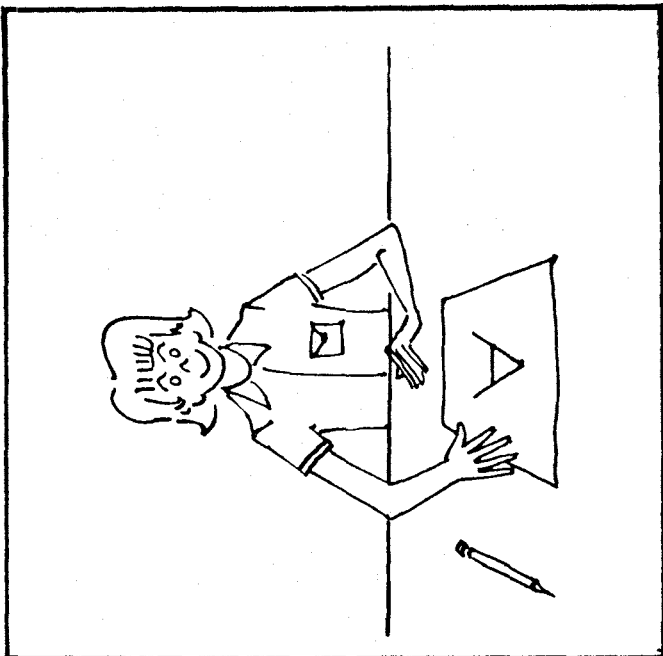
Smallest



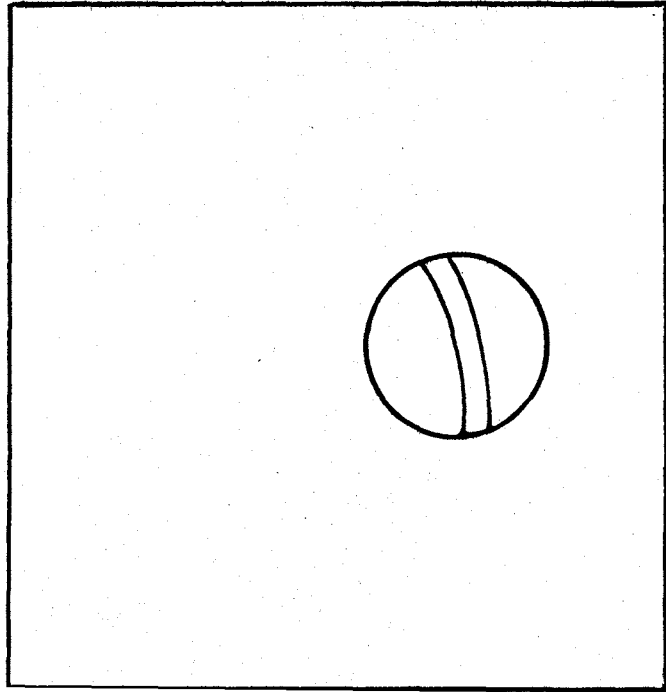
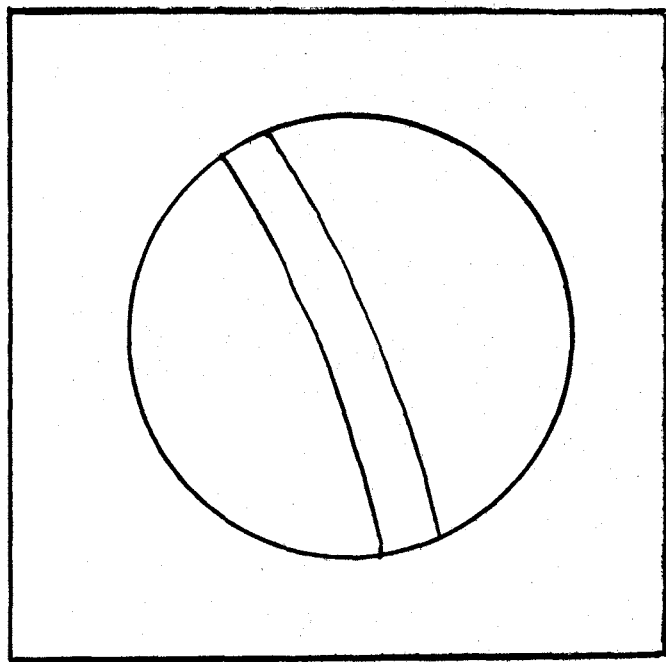
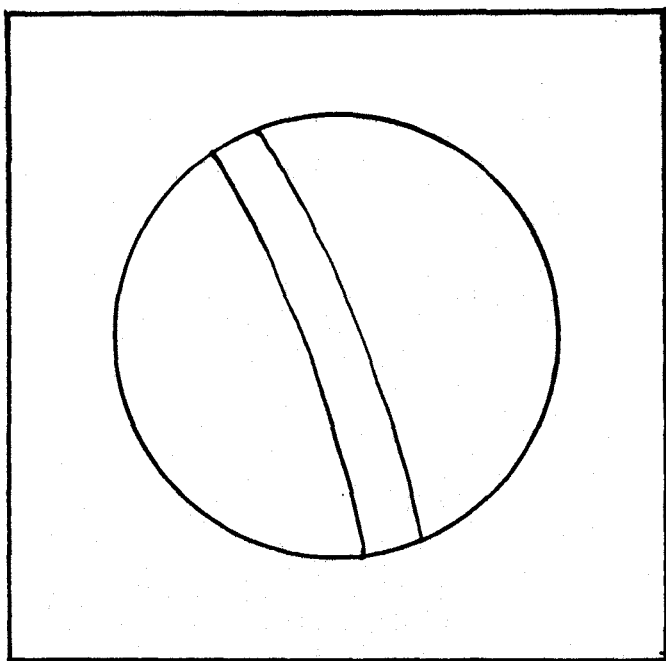
oldest



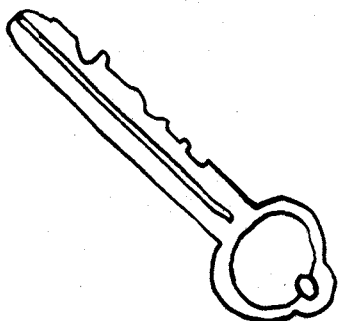
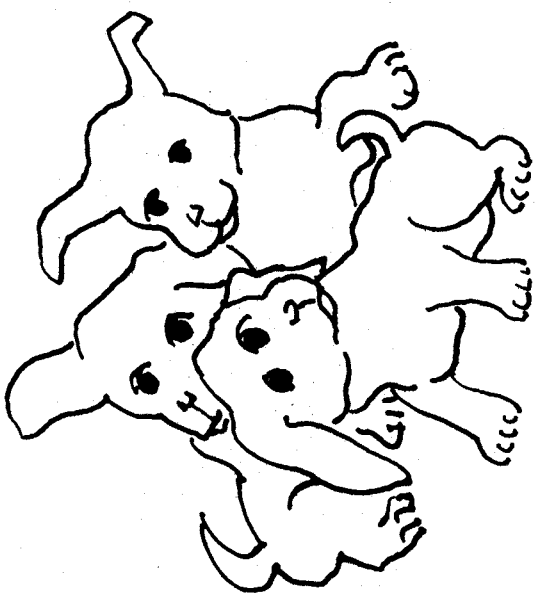
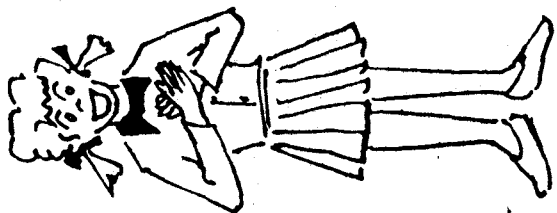
wrote



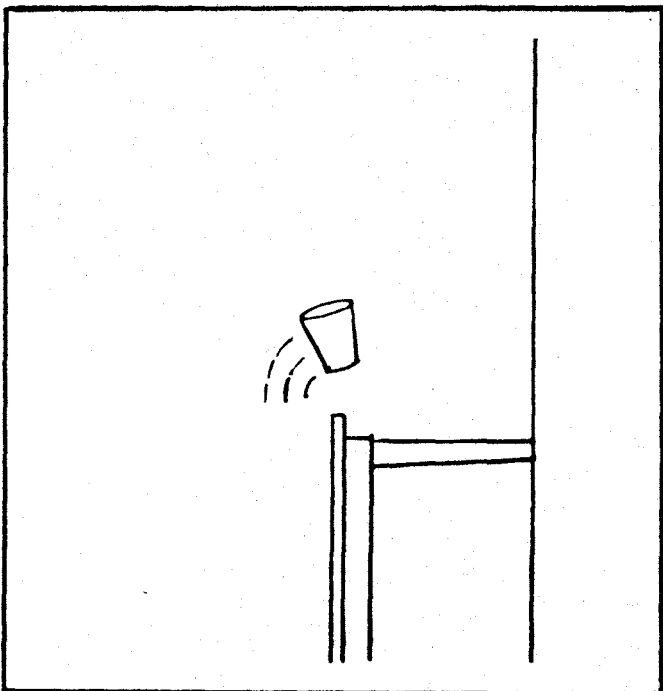
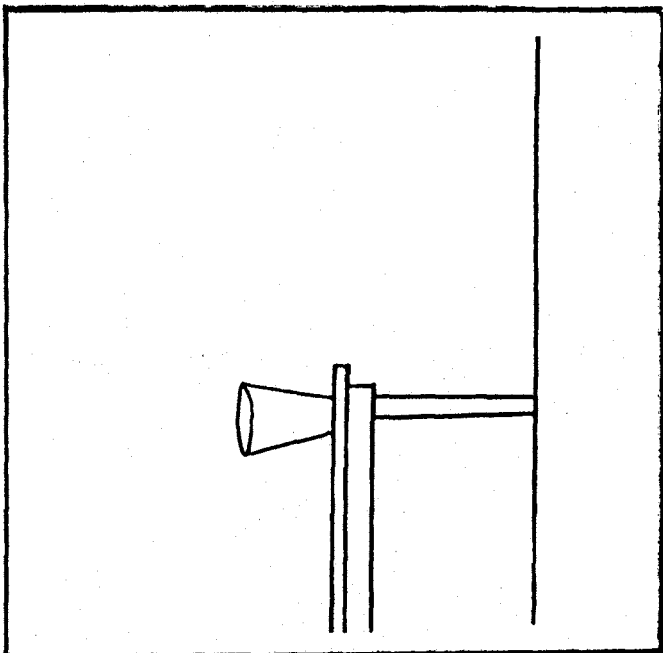
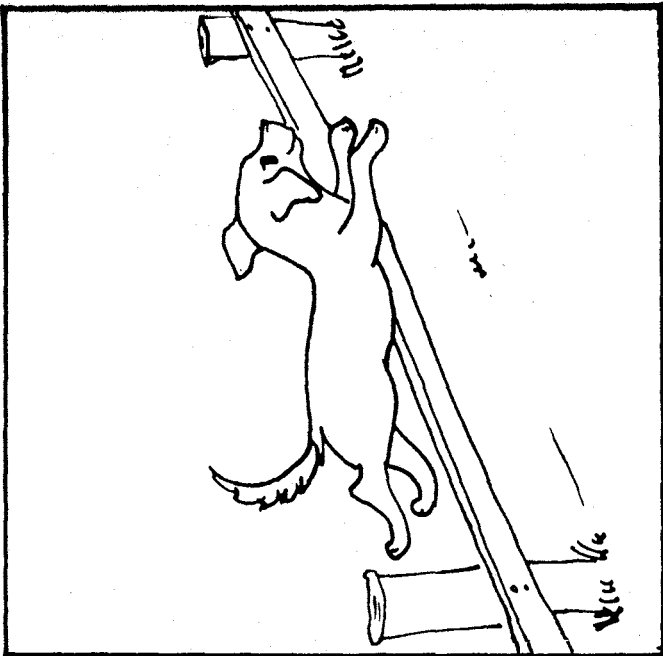
Small



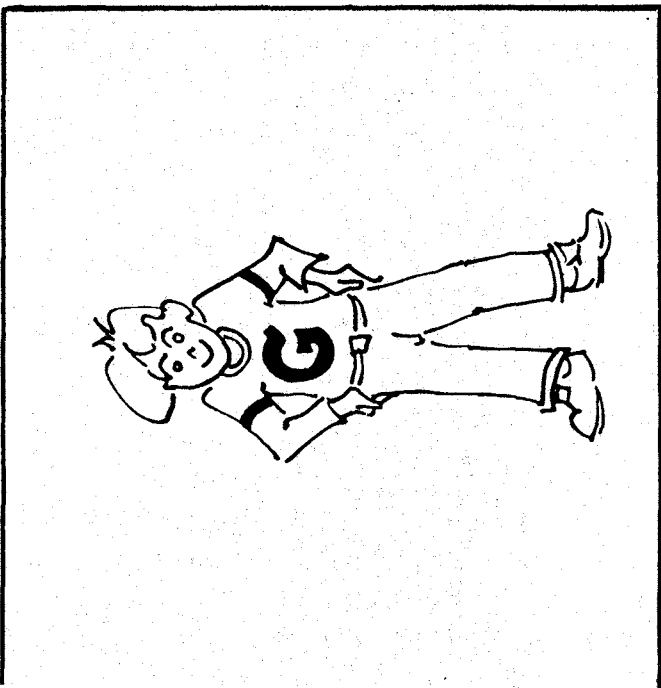
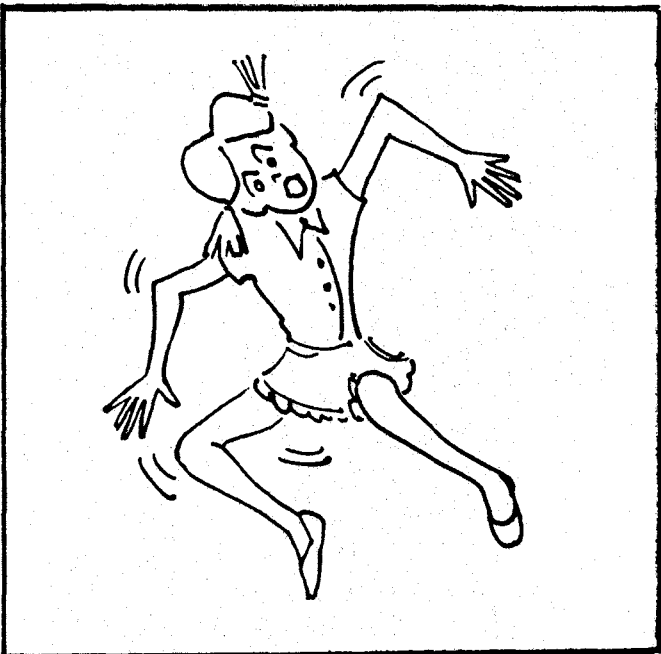
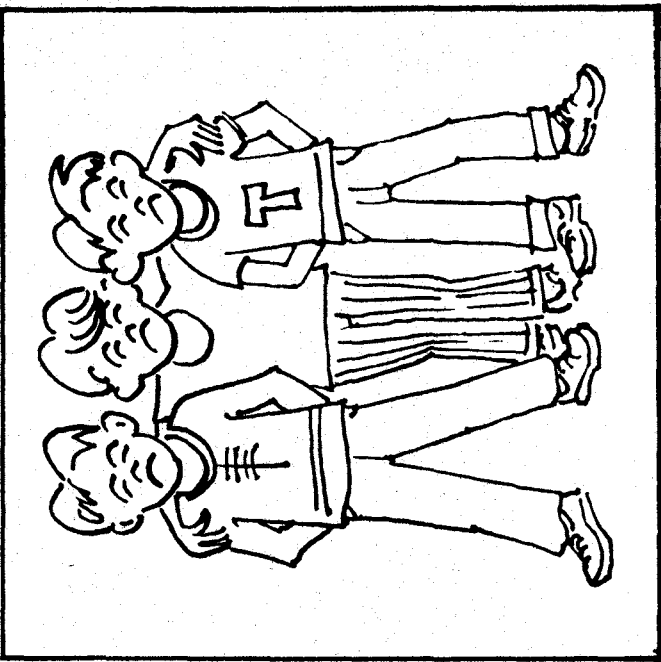
her



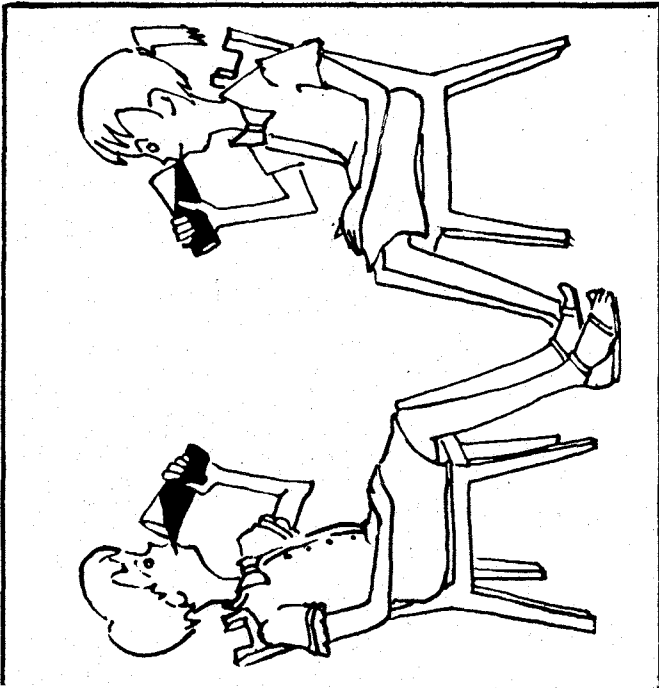
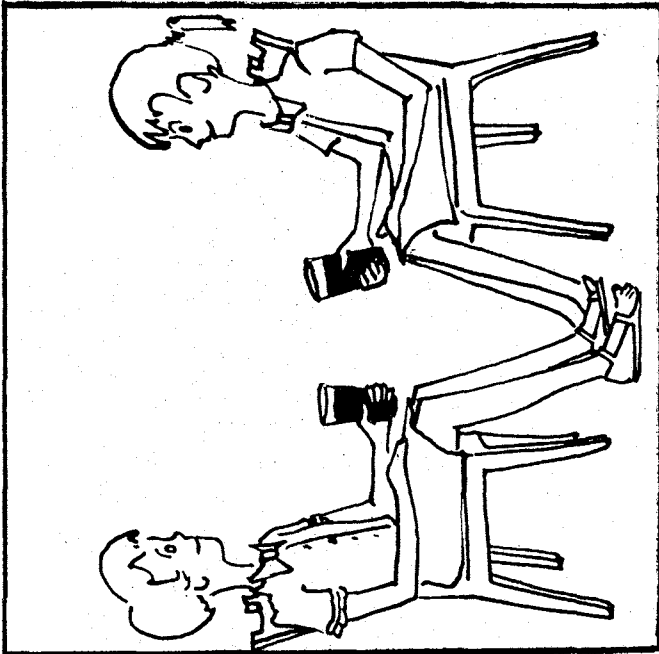
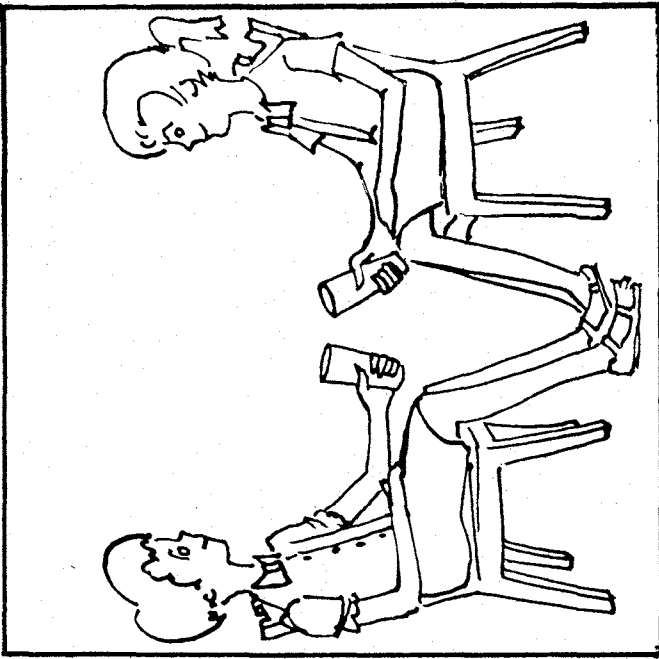
off

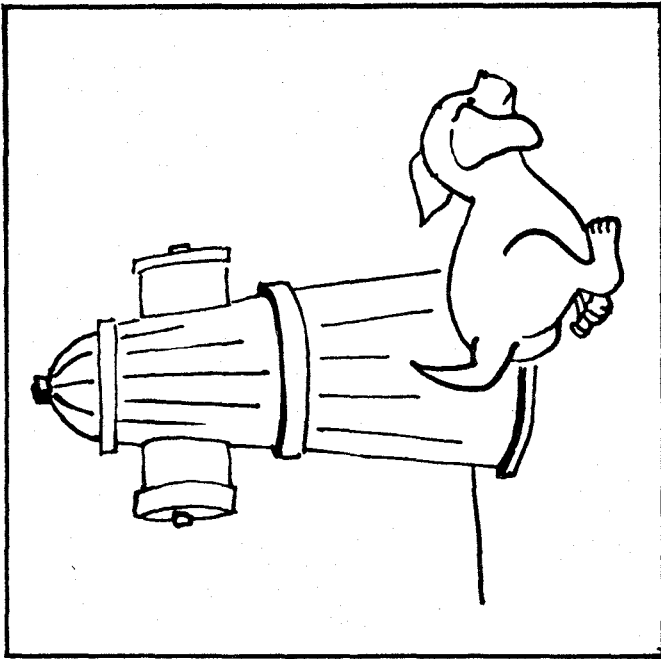
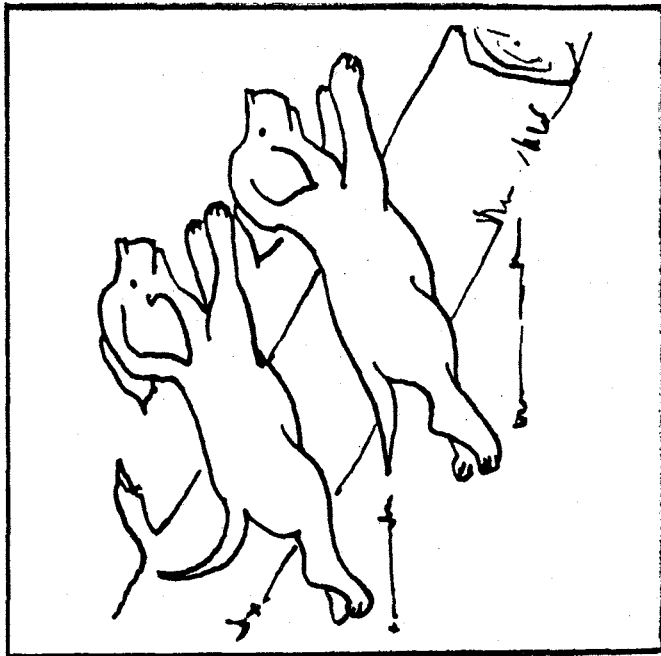
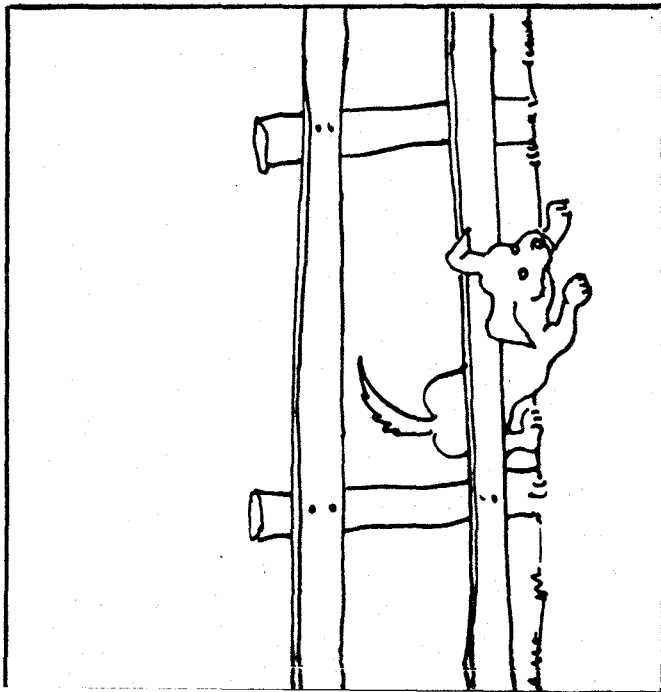


happy

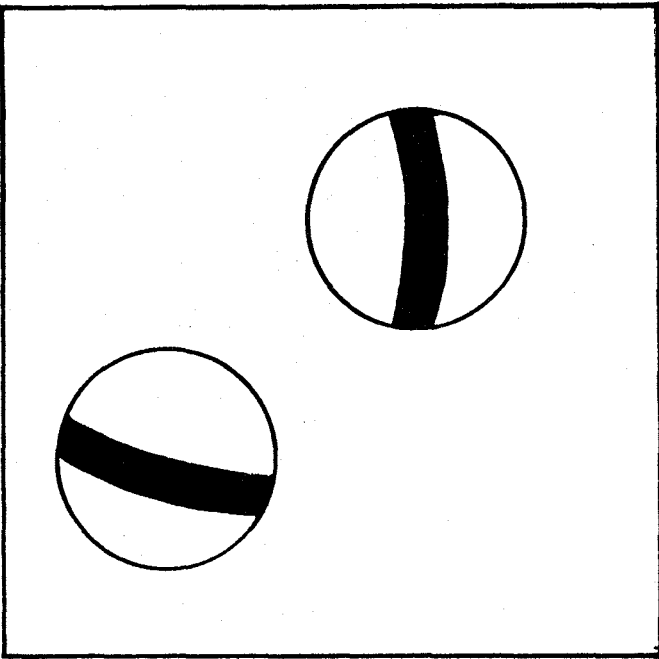
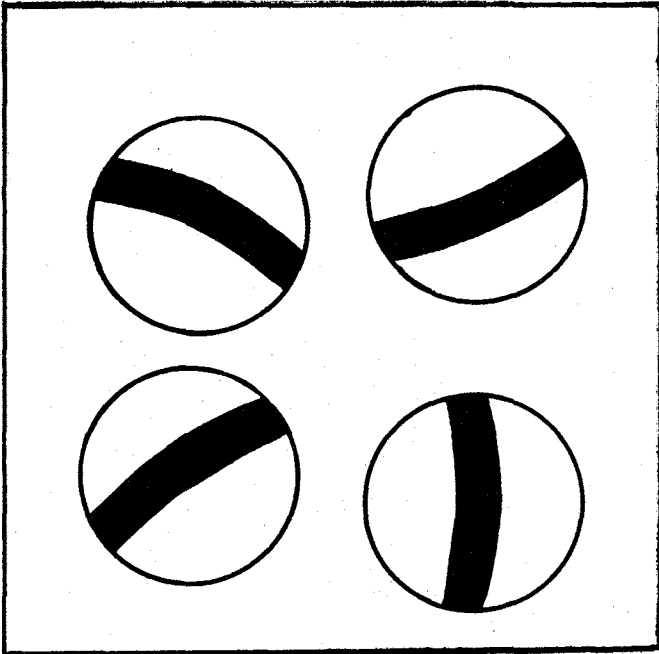
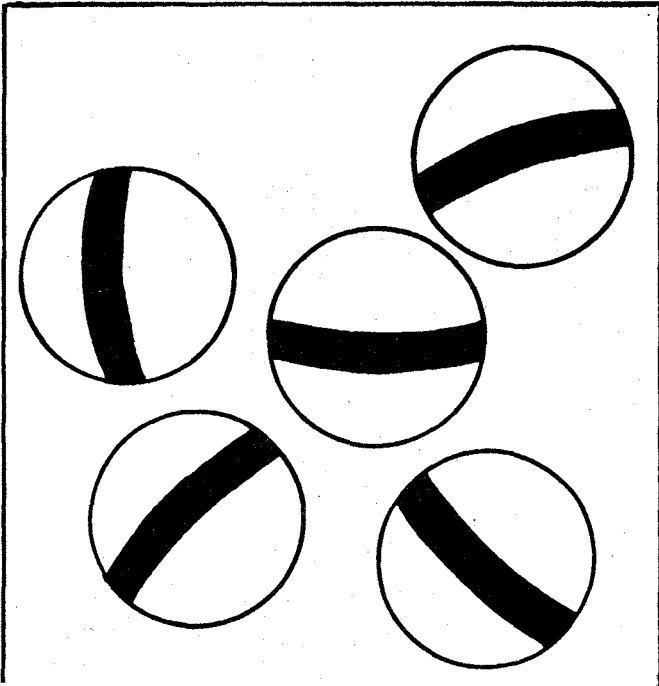


are drinking



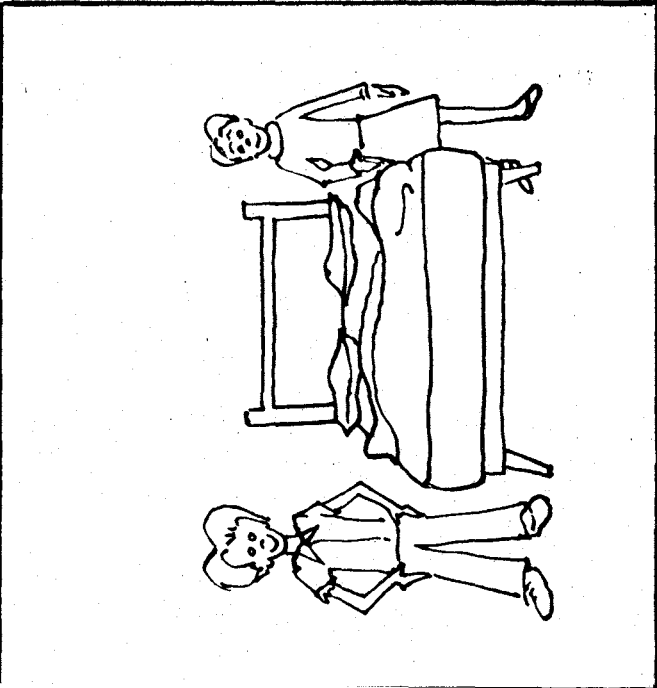
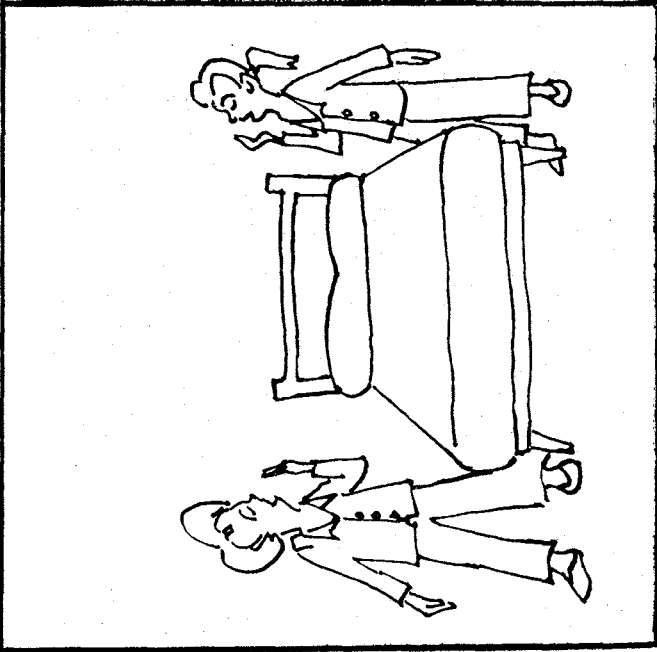
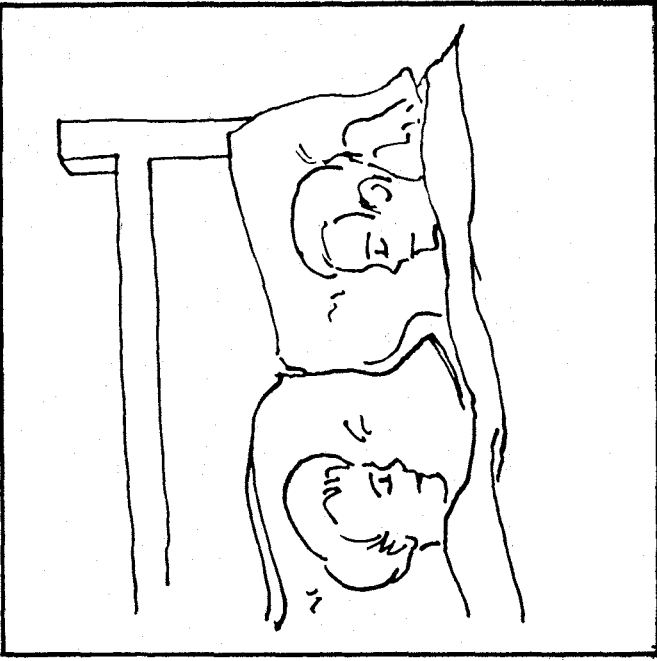


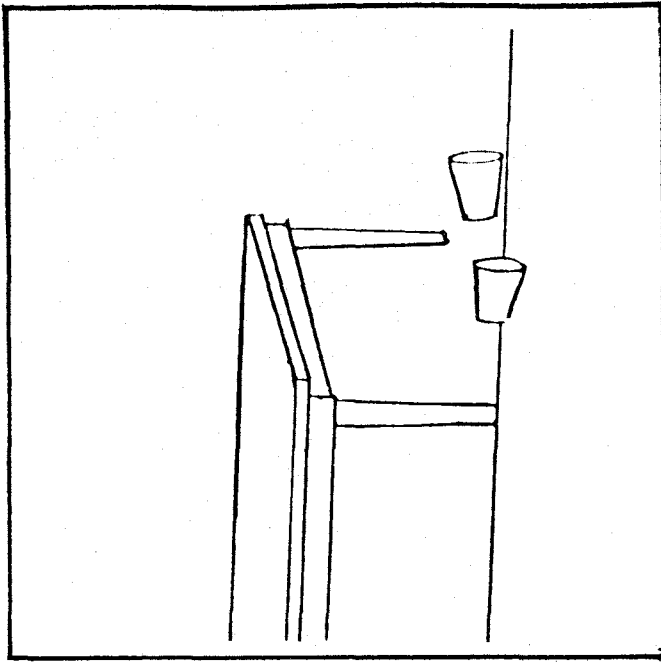
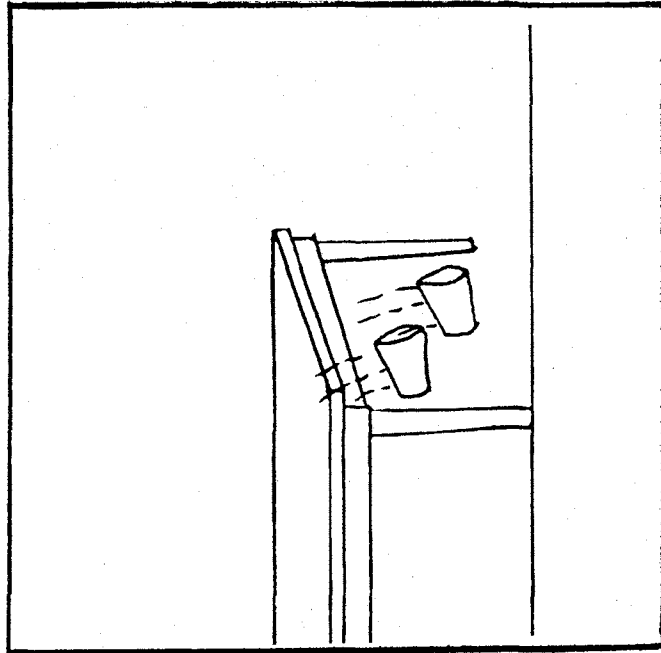
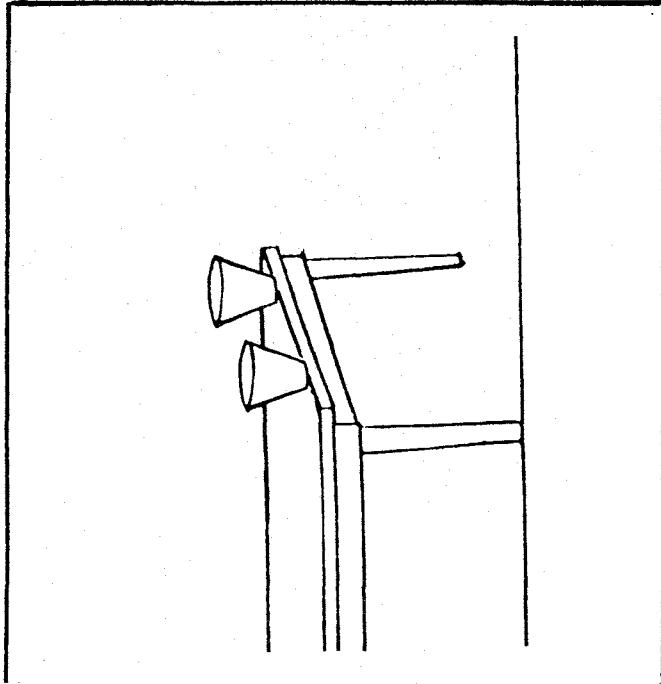
in front of



five

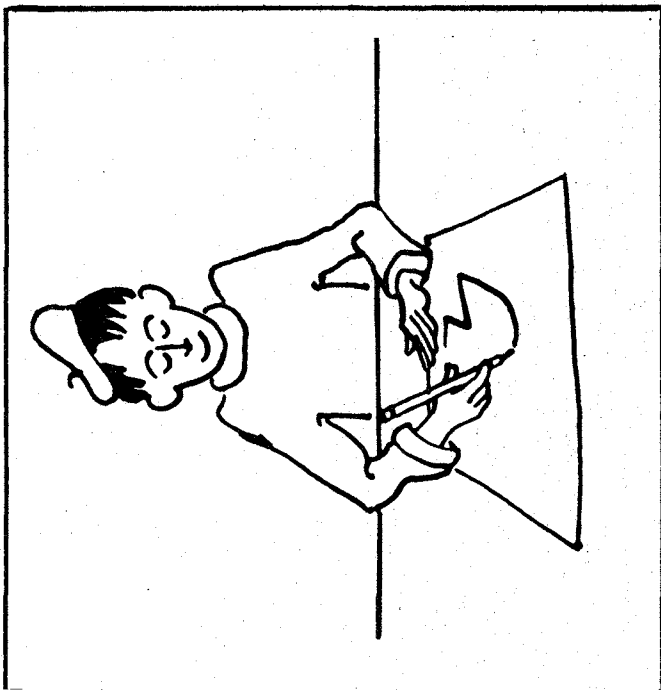
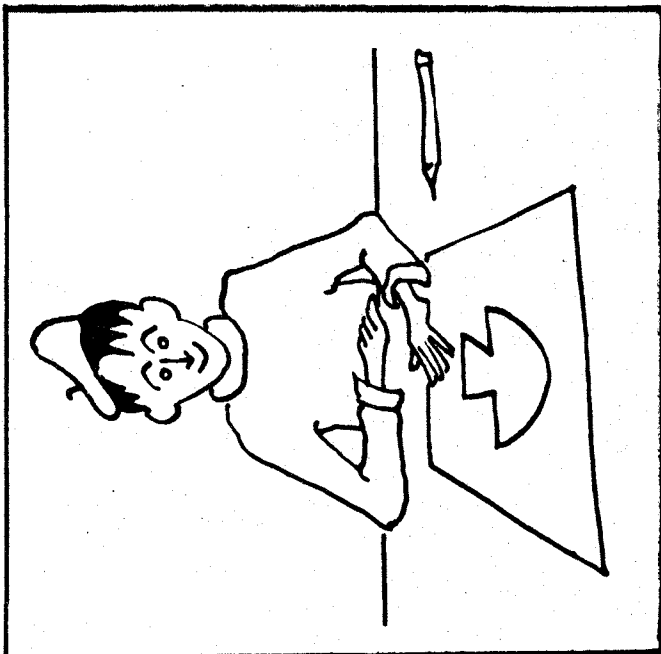
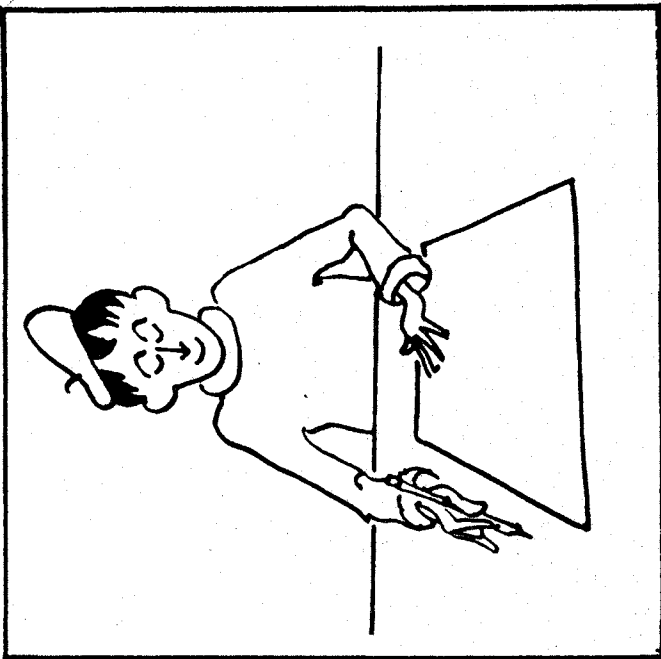
will sleep

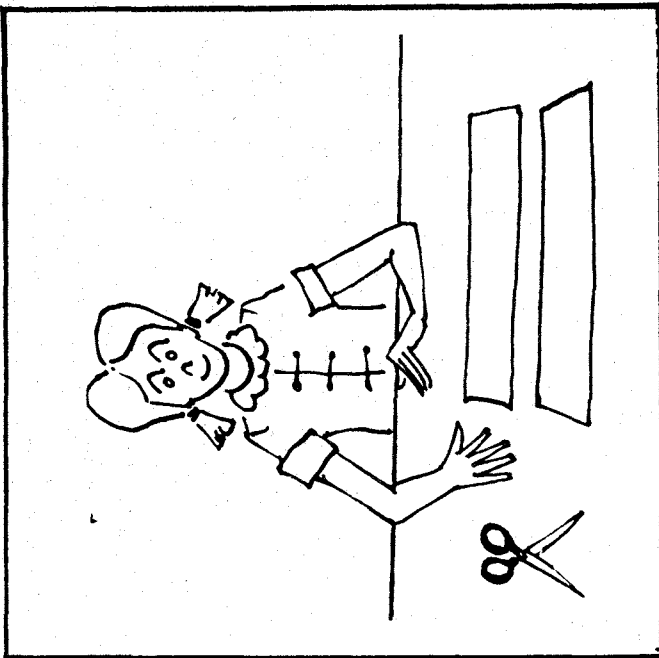
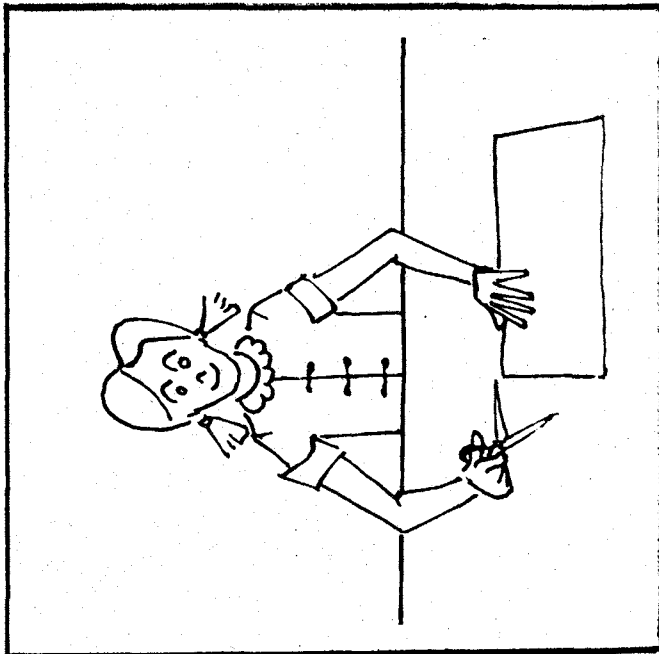
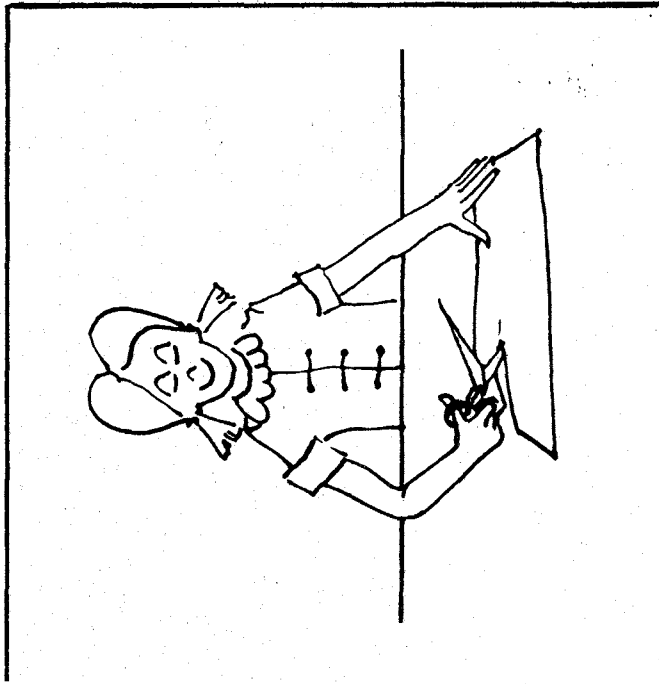




are falling

is drawing

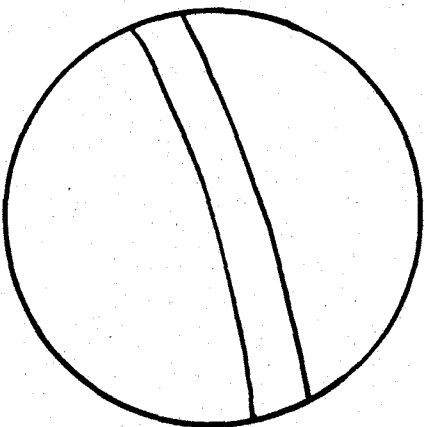
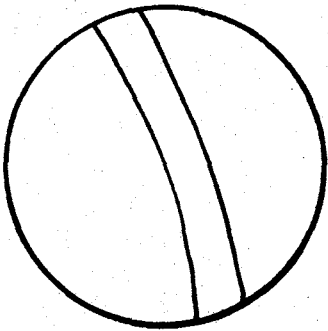
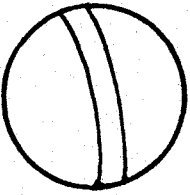




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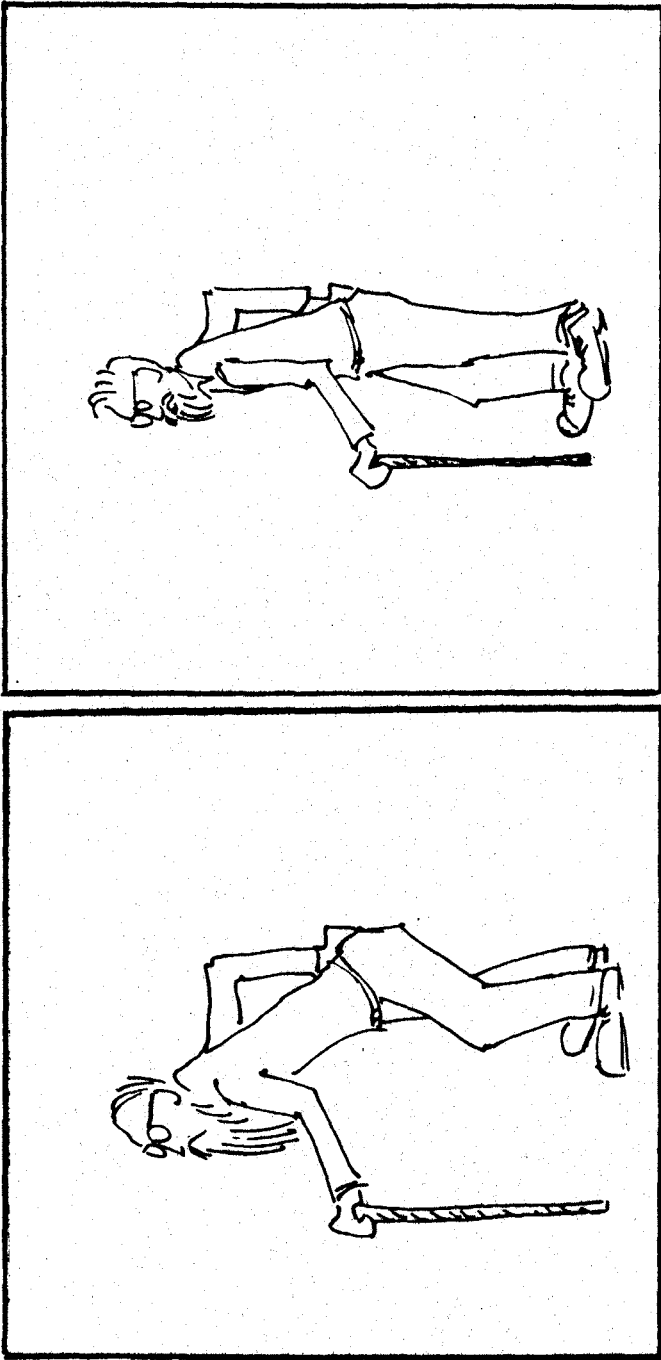
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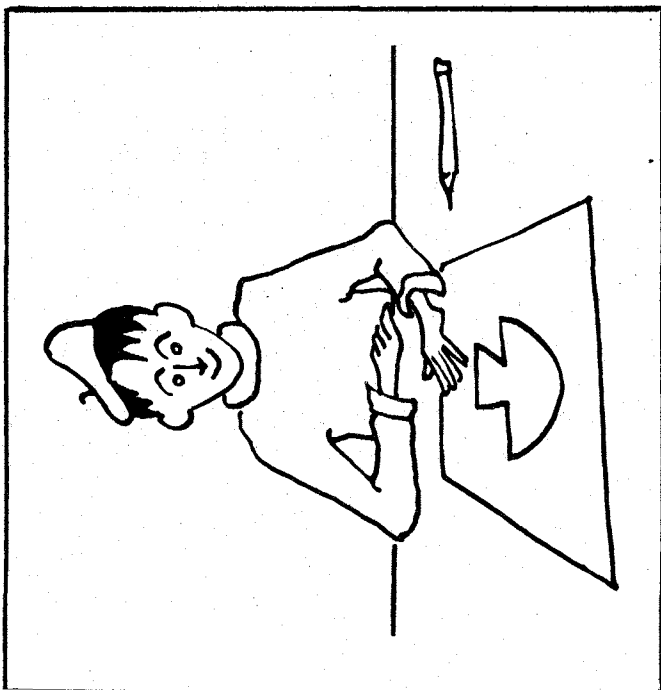
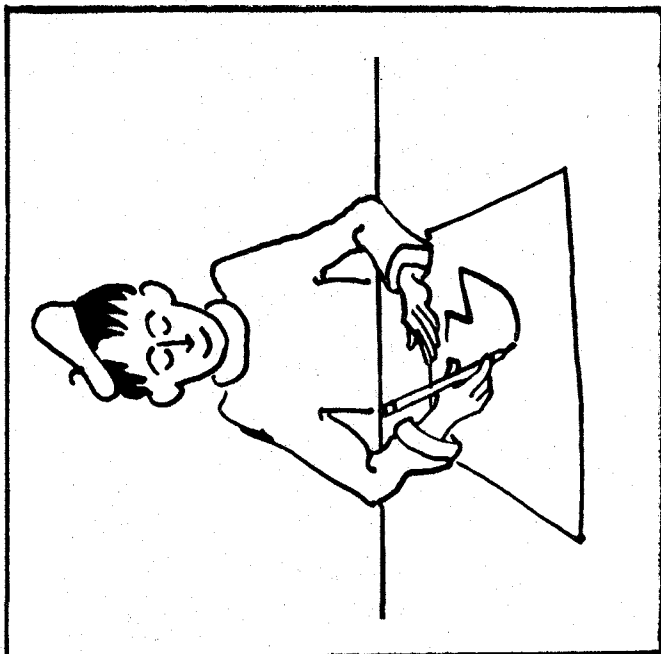
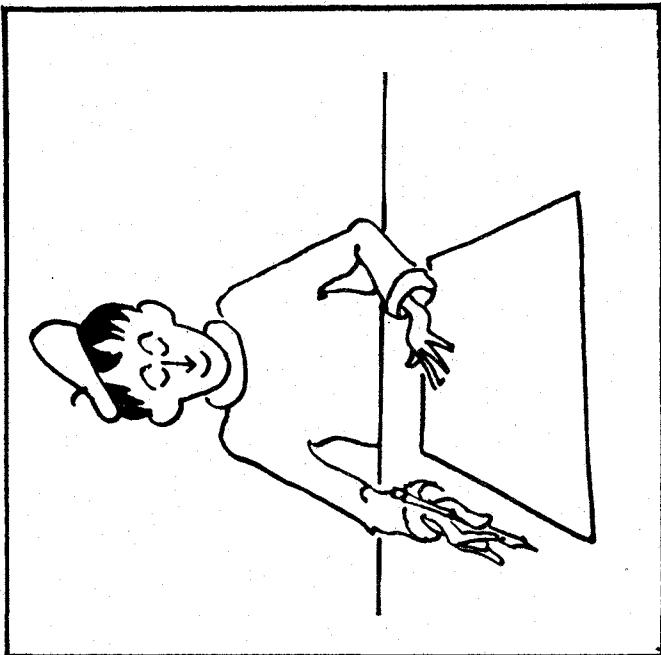


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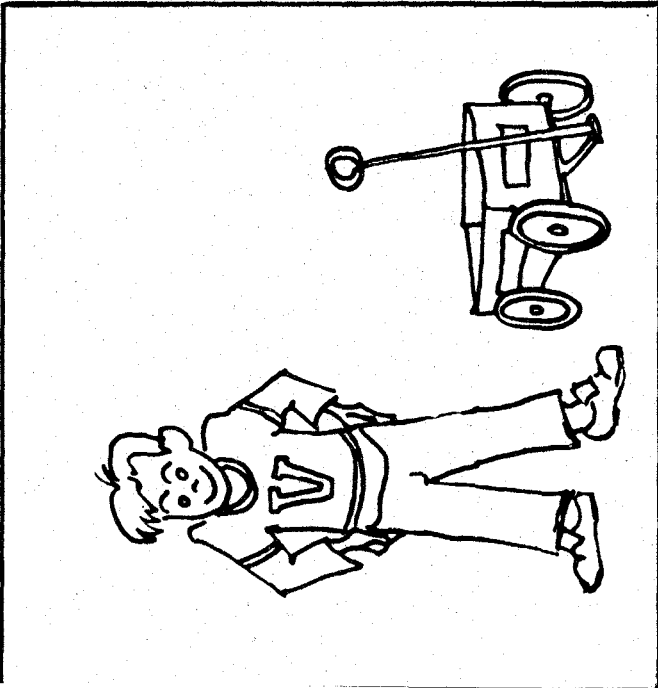
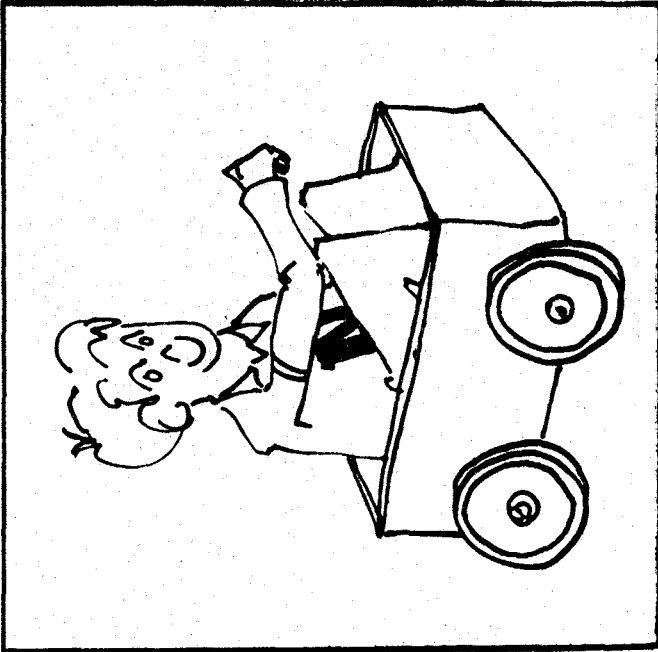
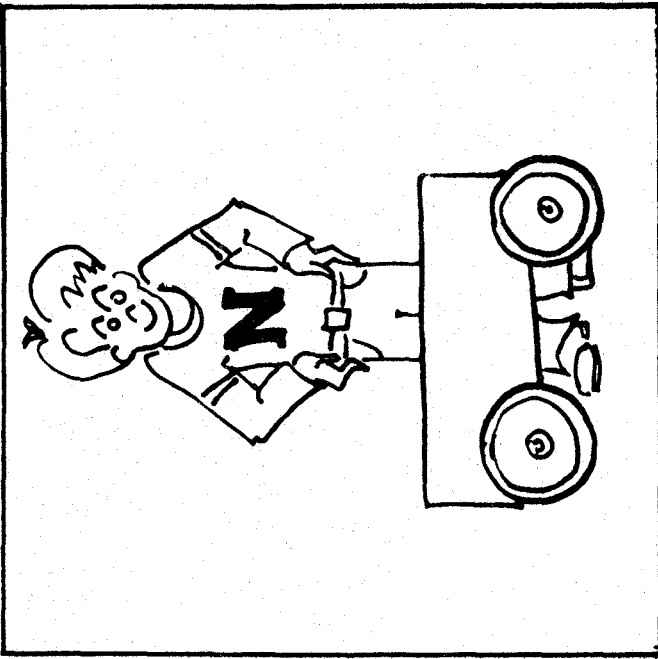
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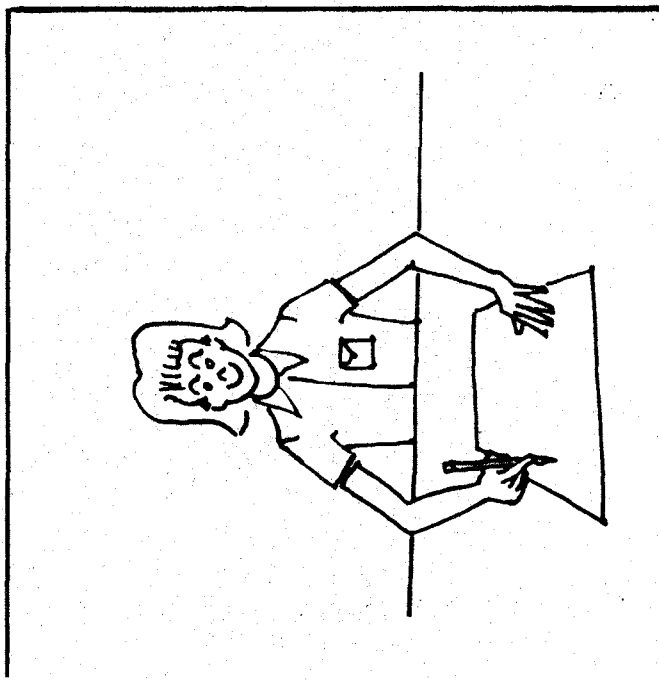
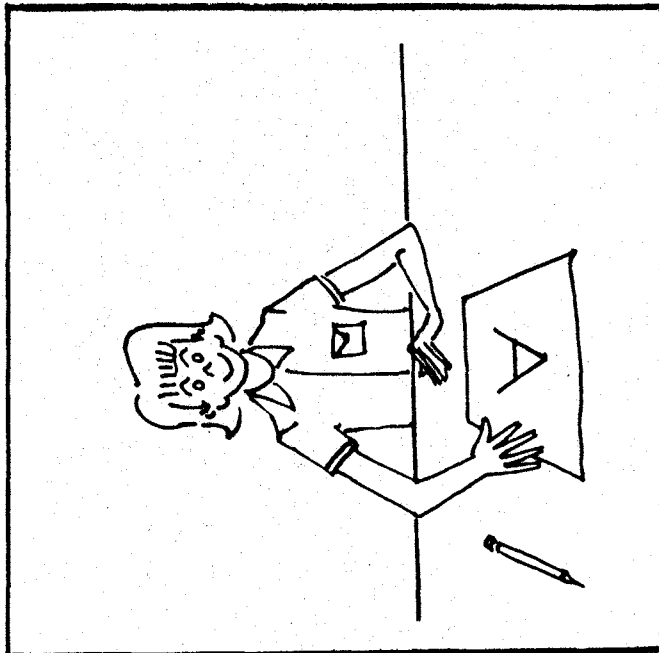
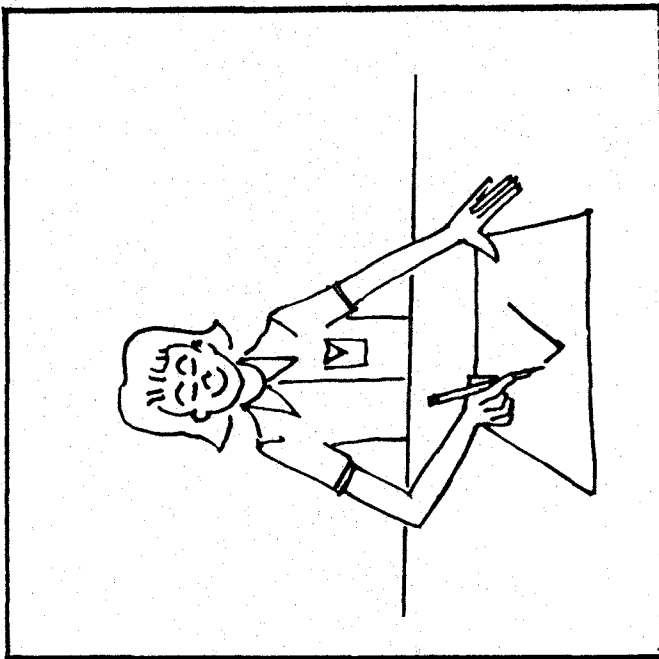
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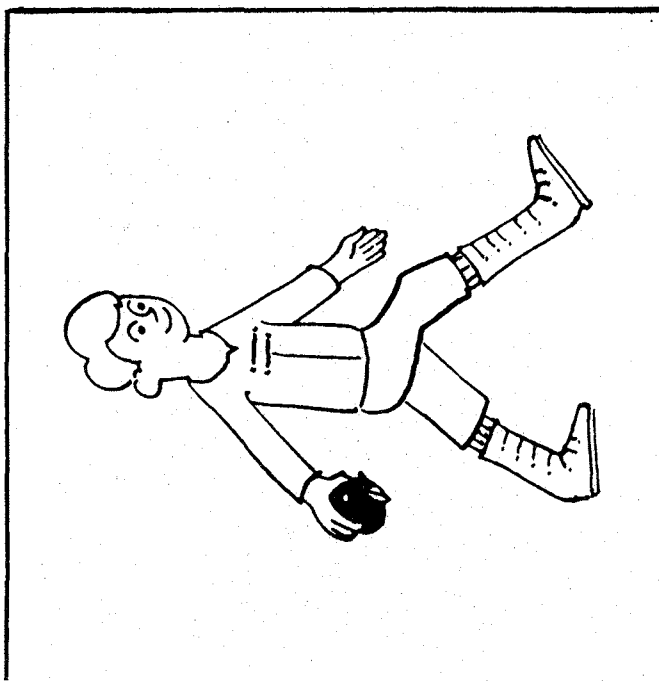
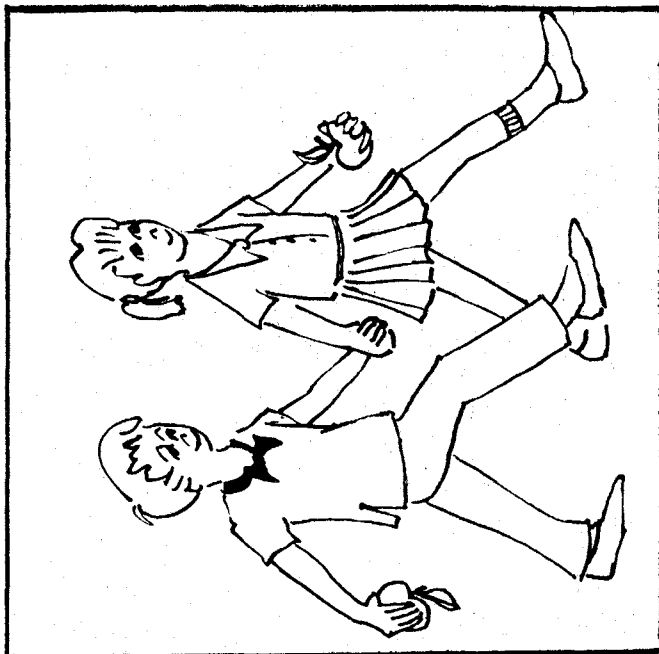
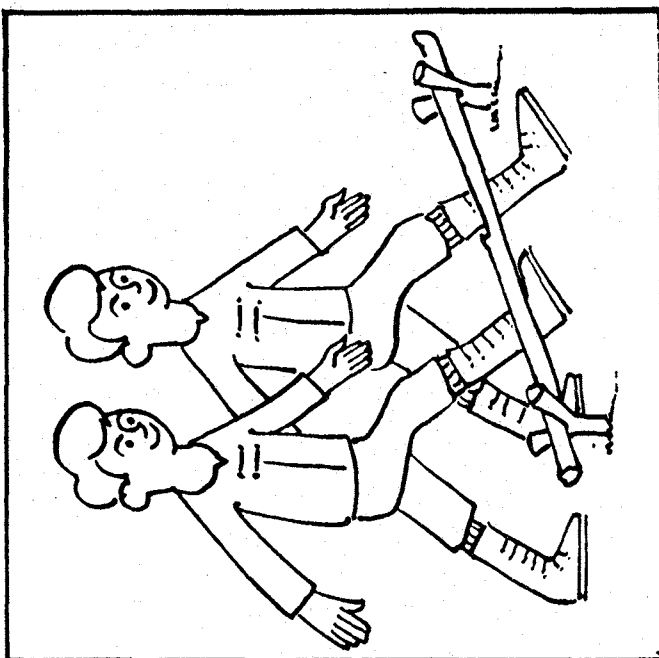
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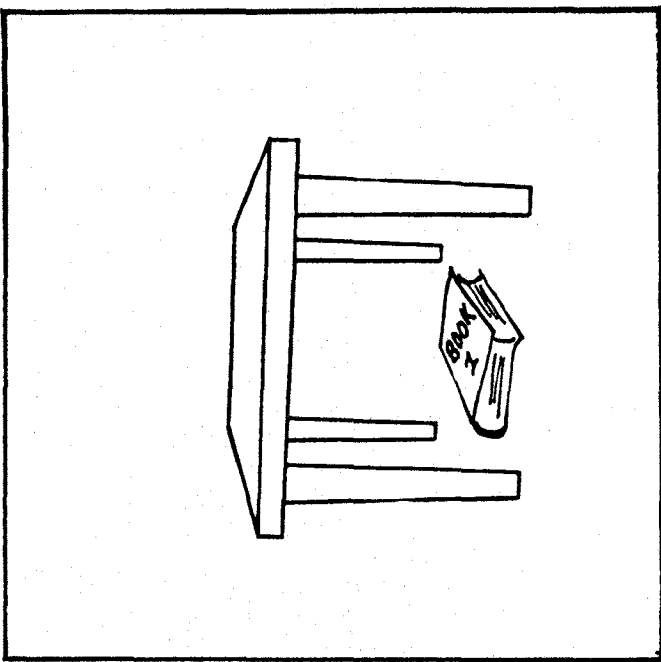
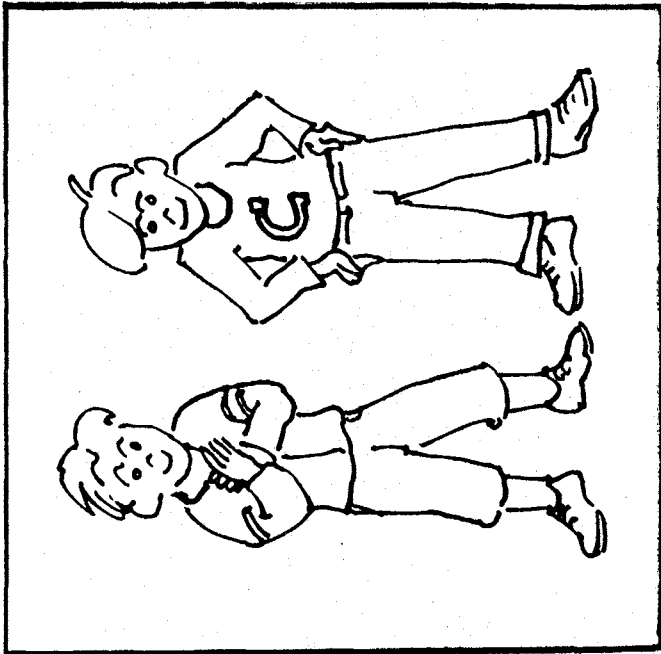
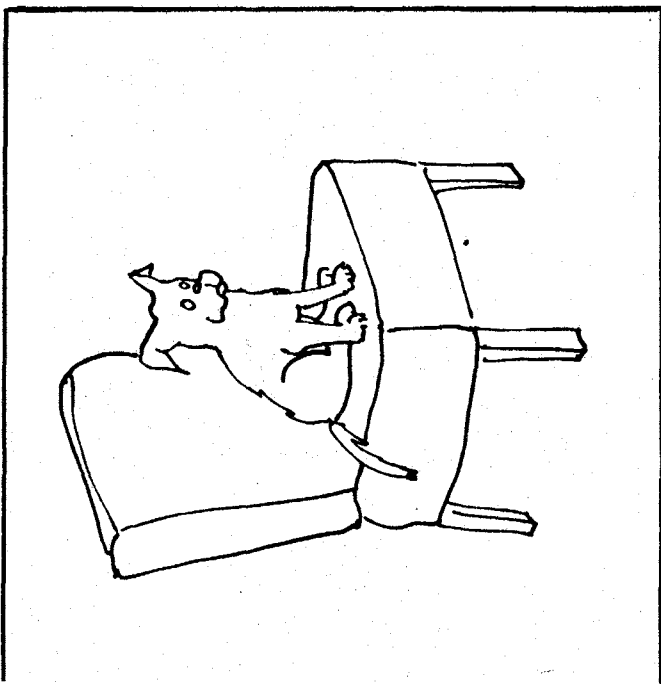


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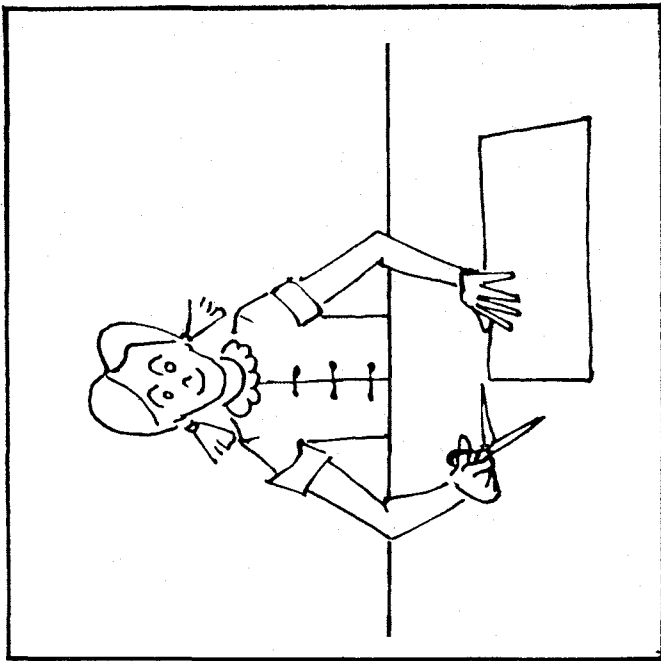
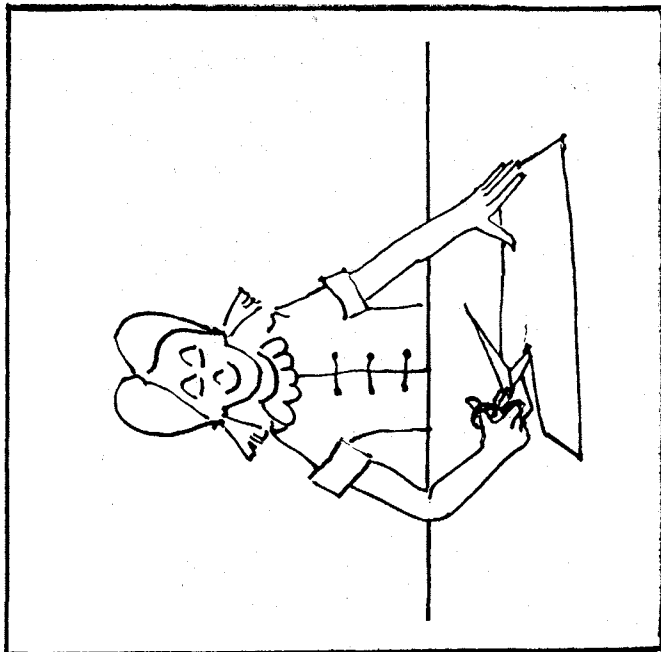
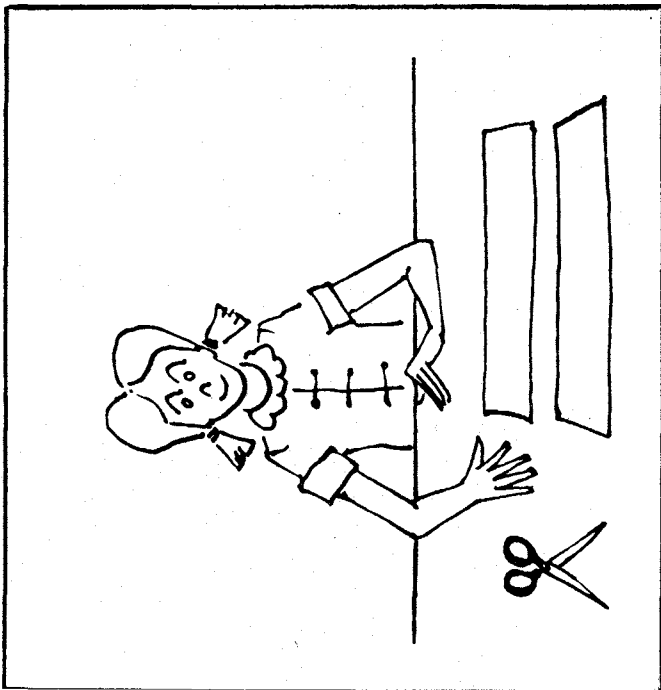


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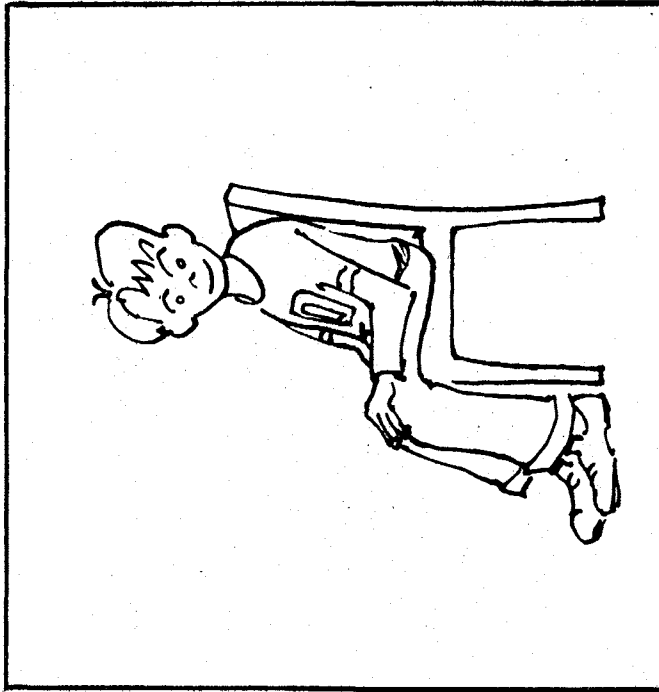
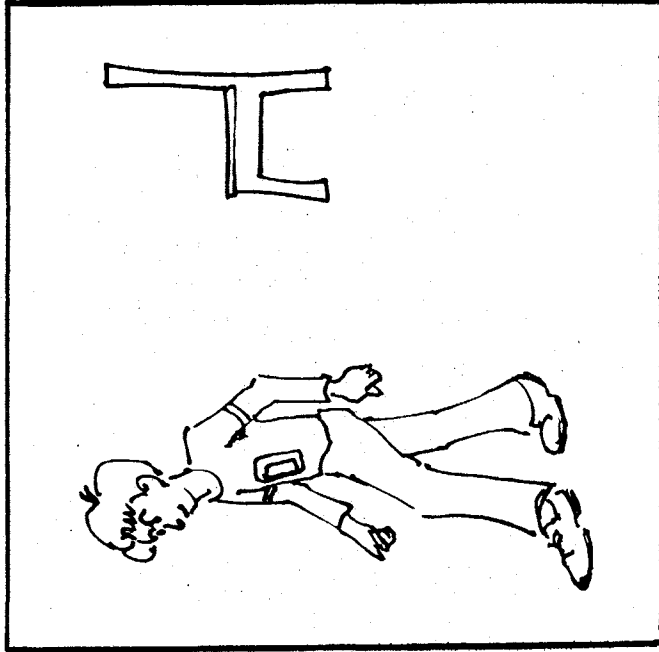
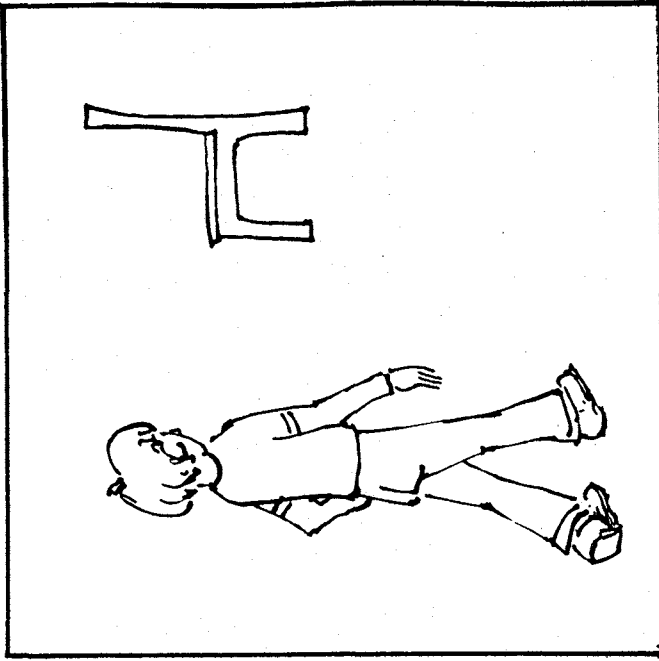




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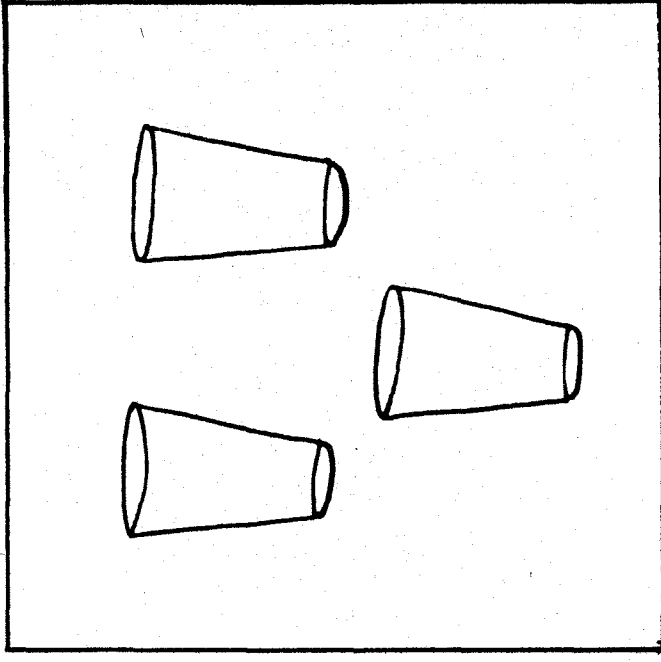
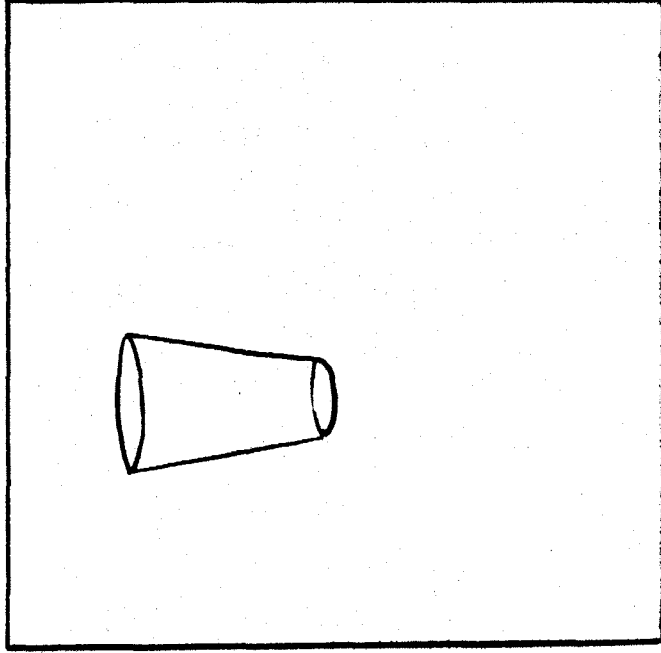
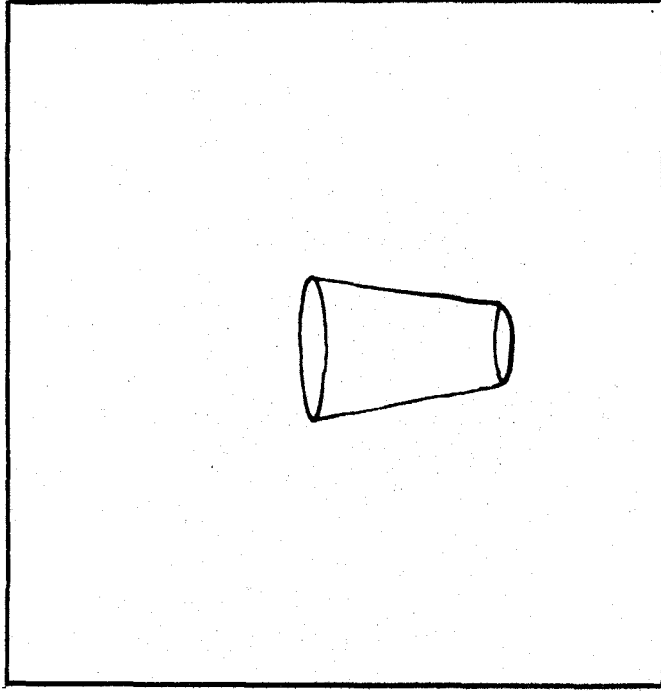


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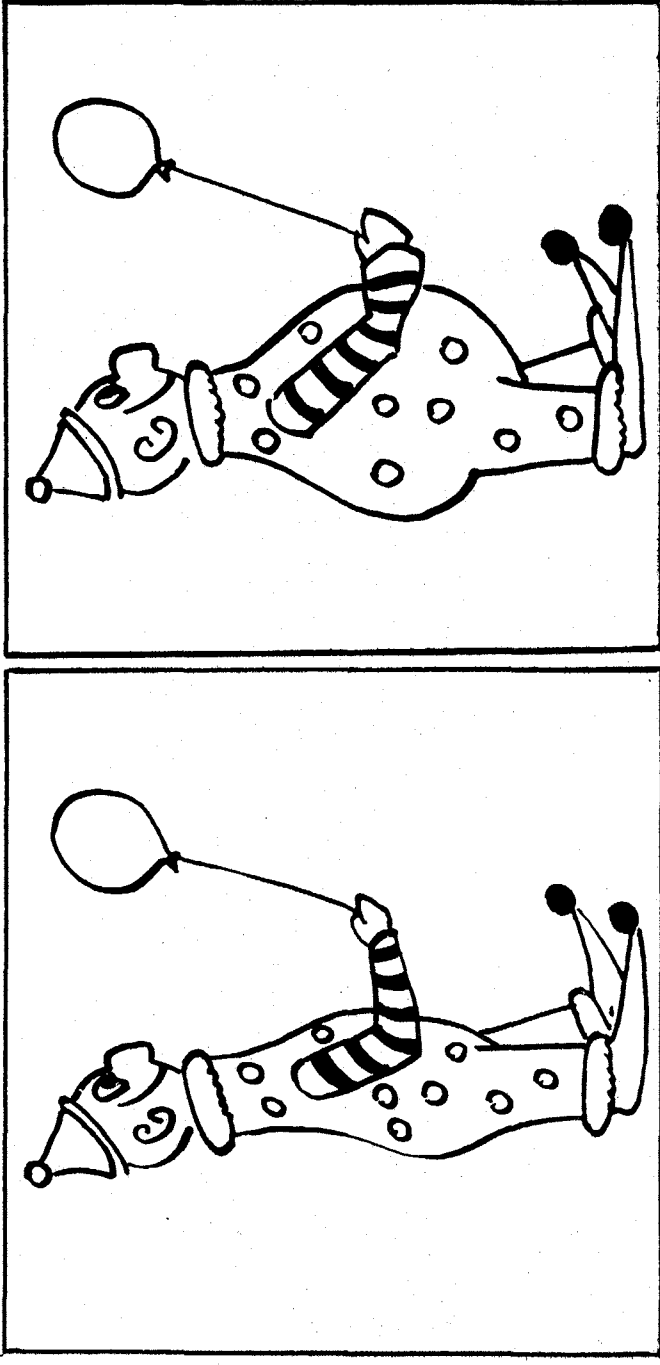


sat

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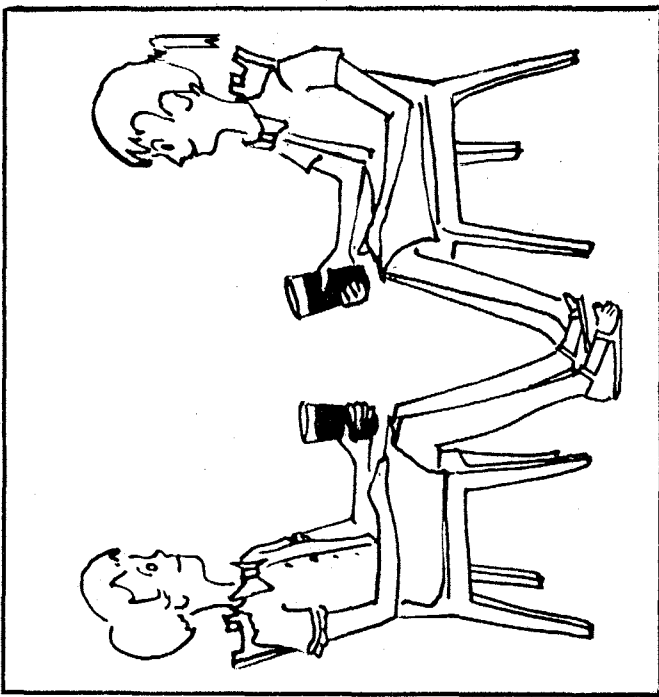
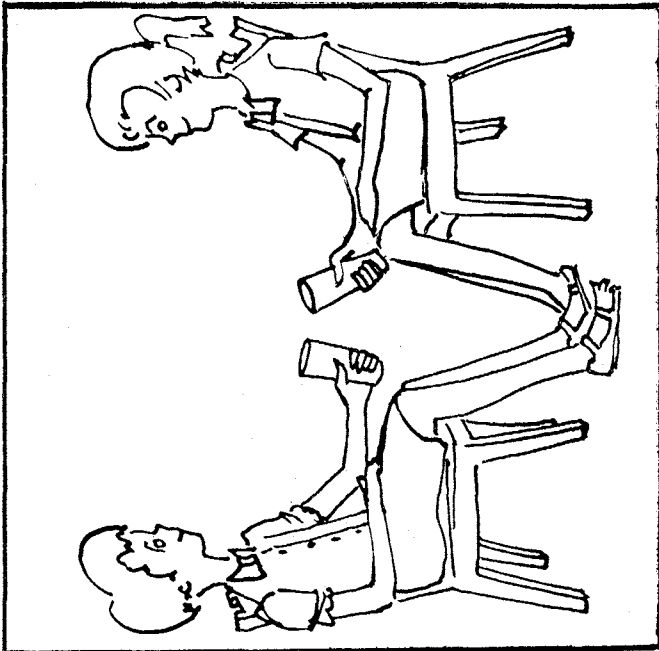
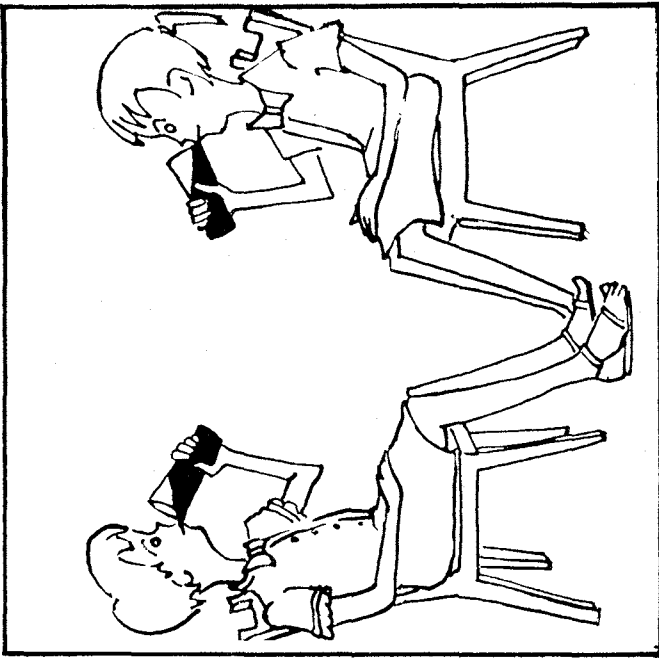


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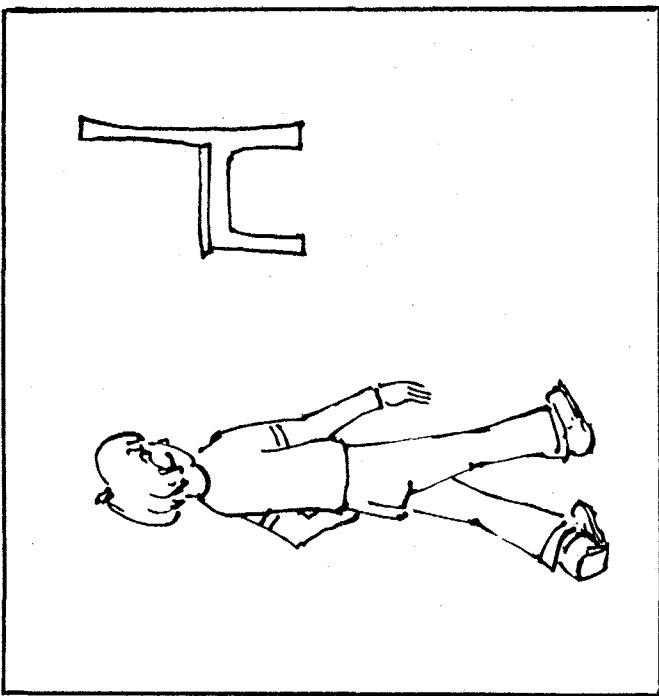
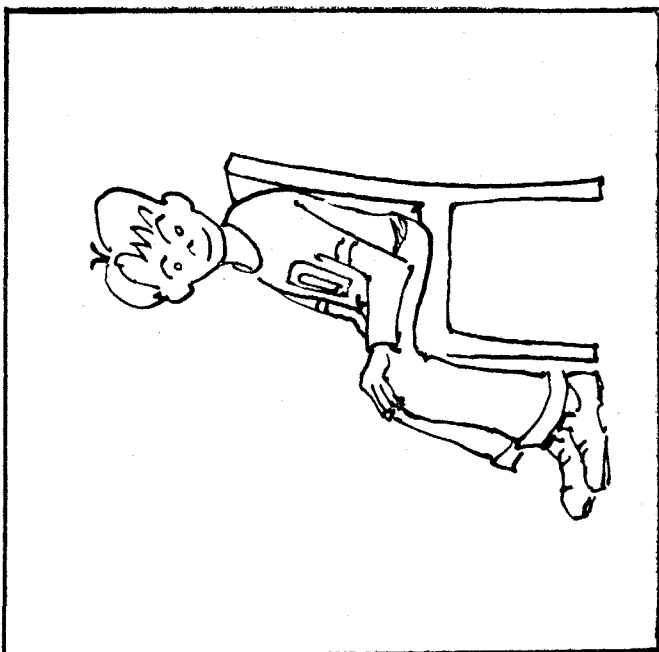
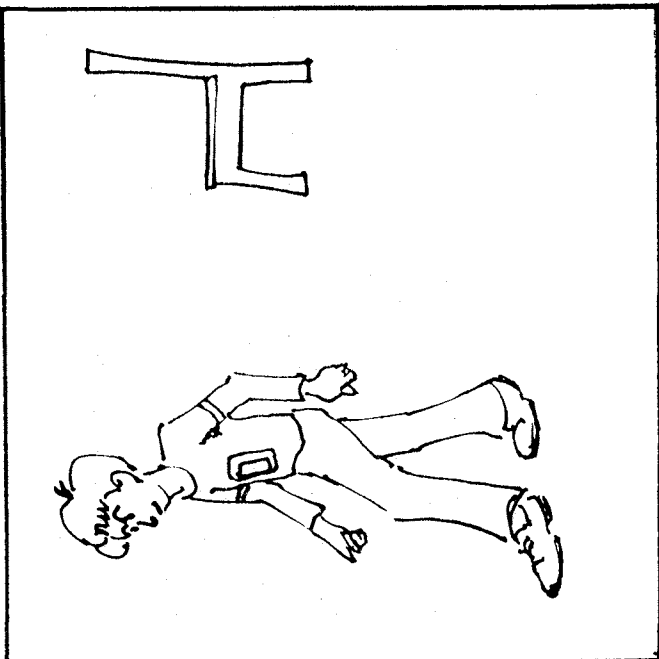


fatter

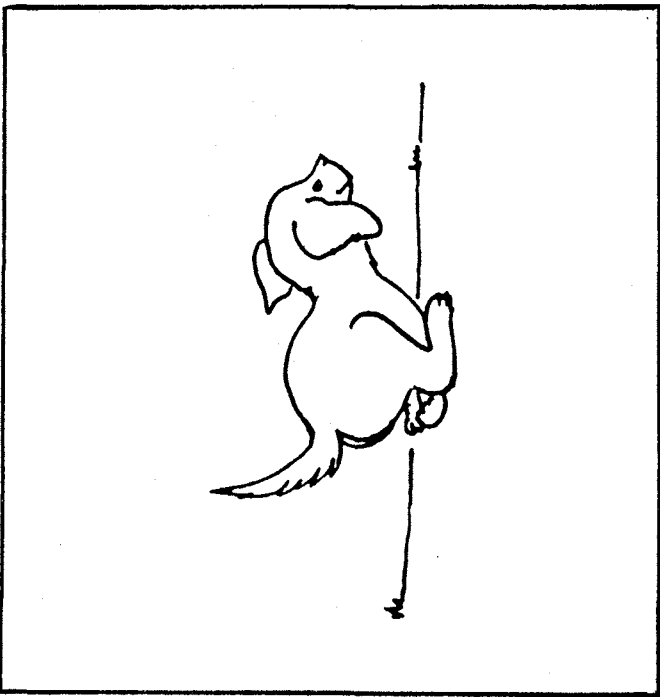
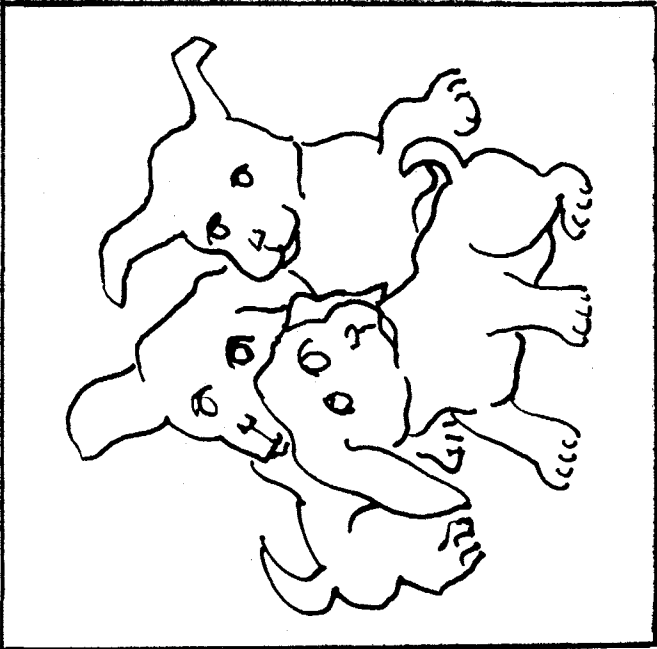
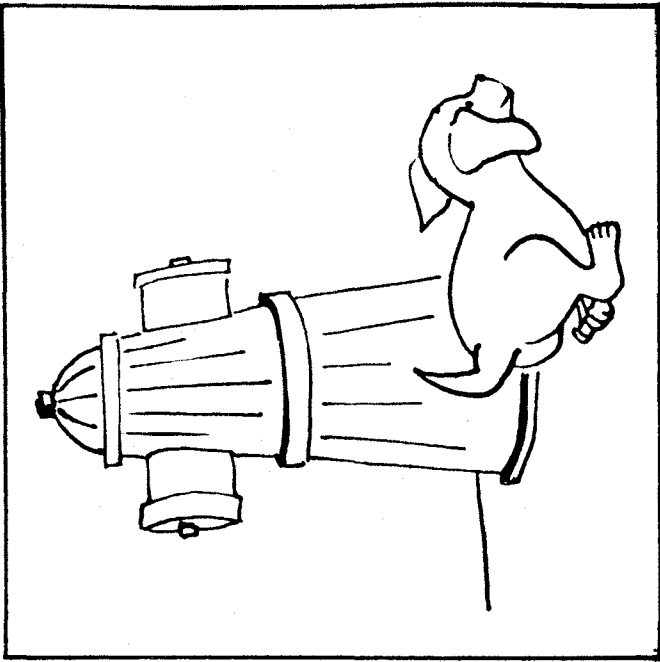
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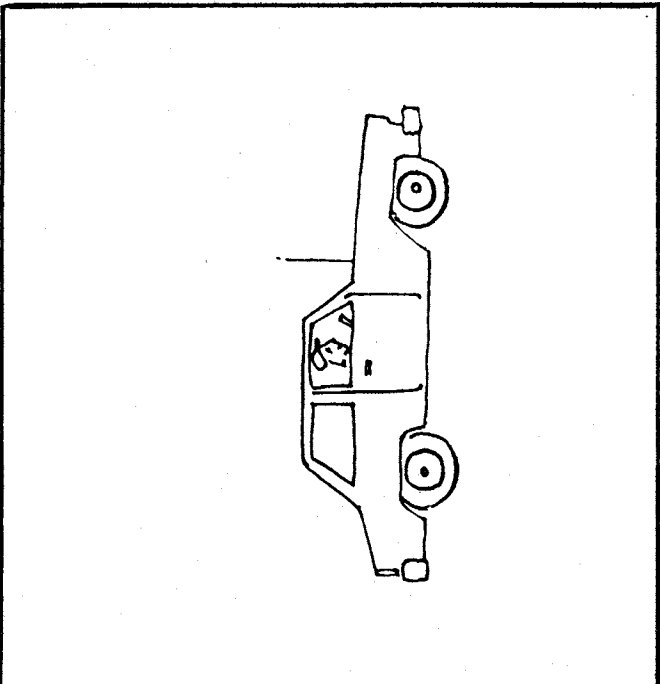
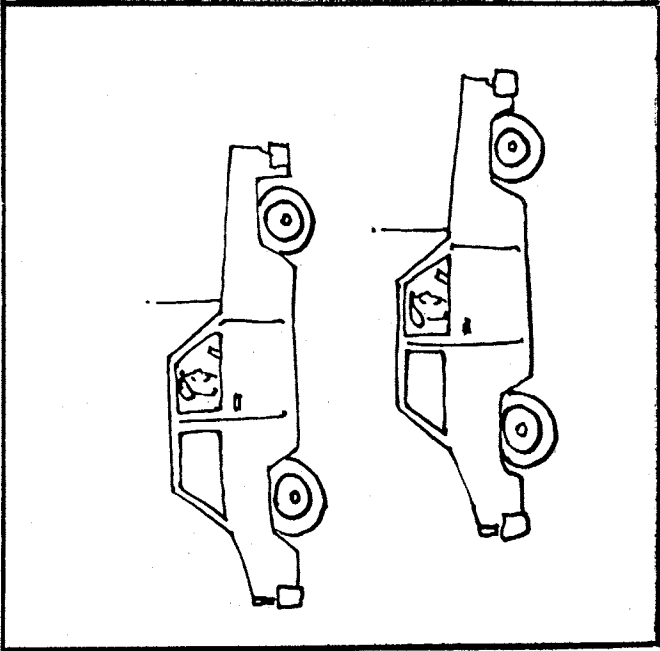
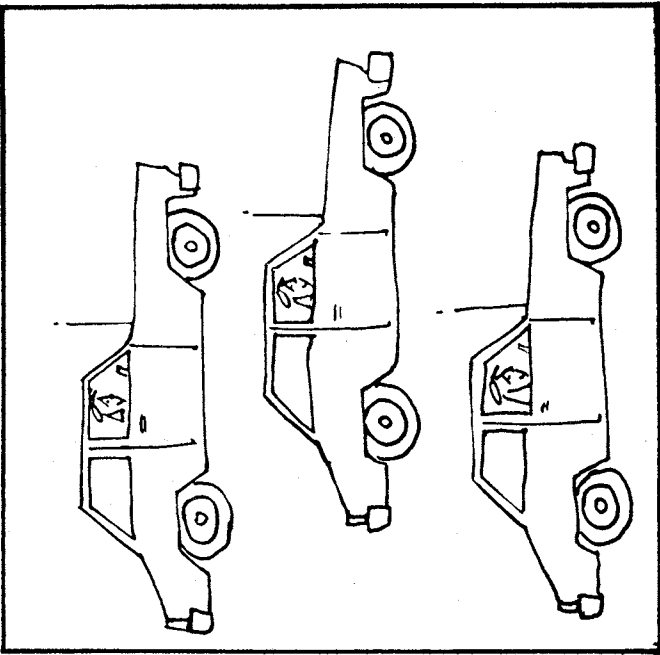
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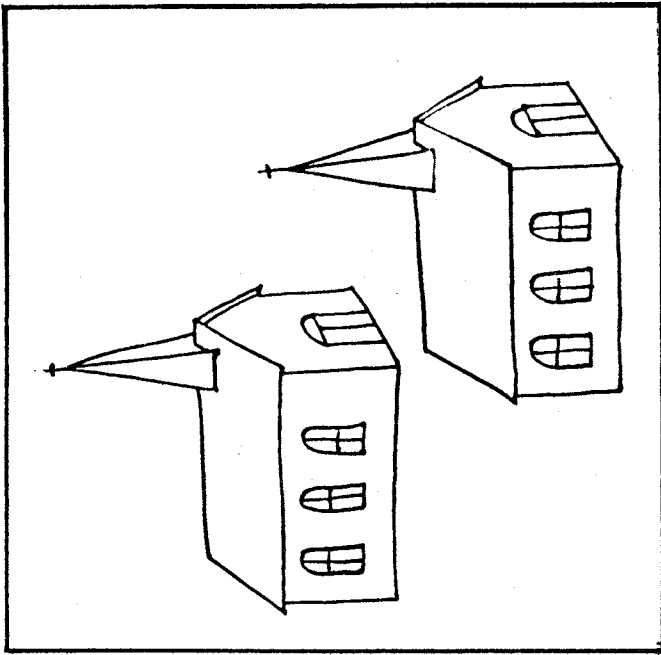
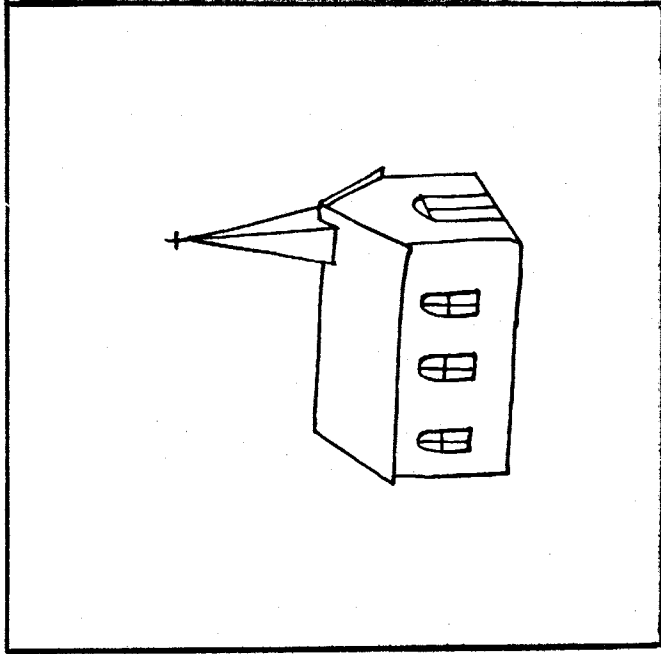
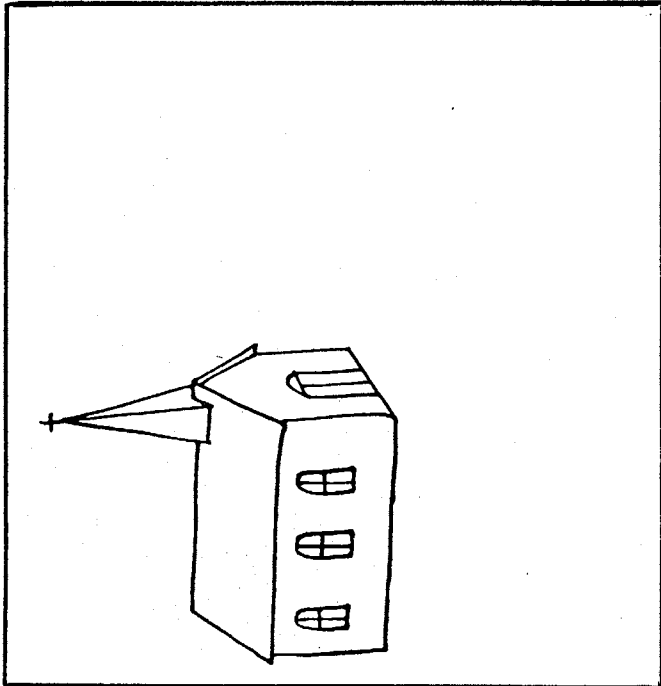
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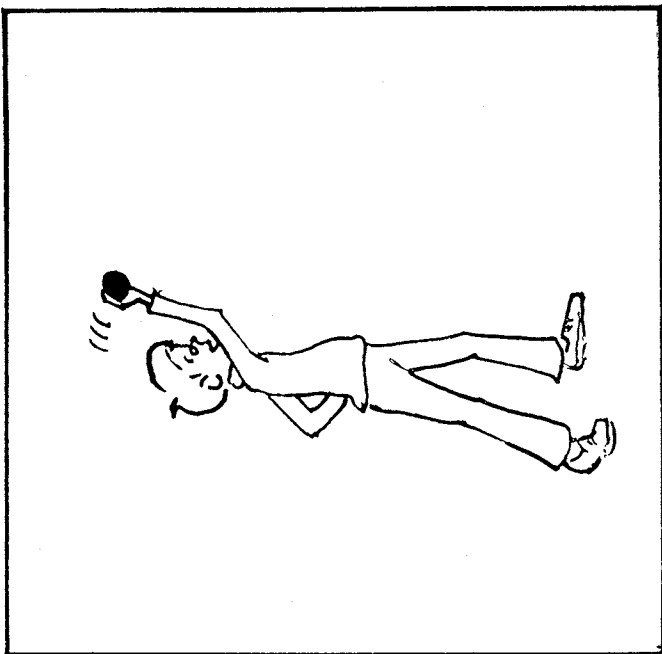
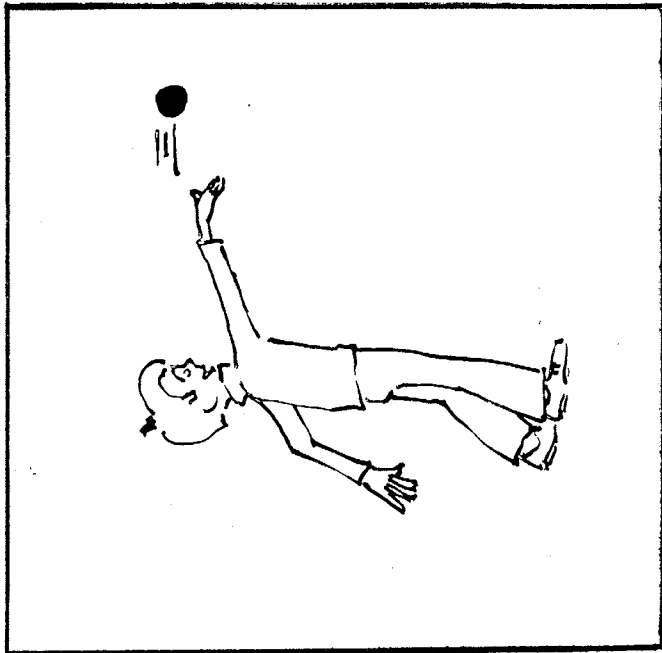
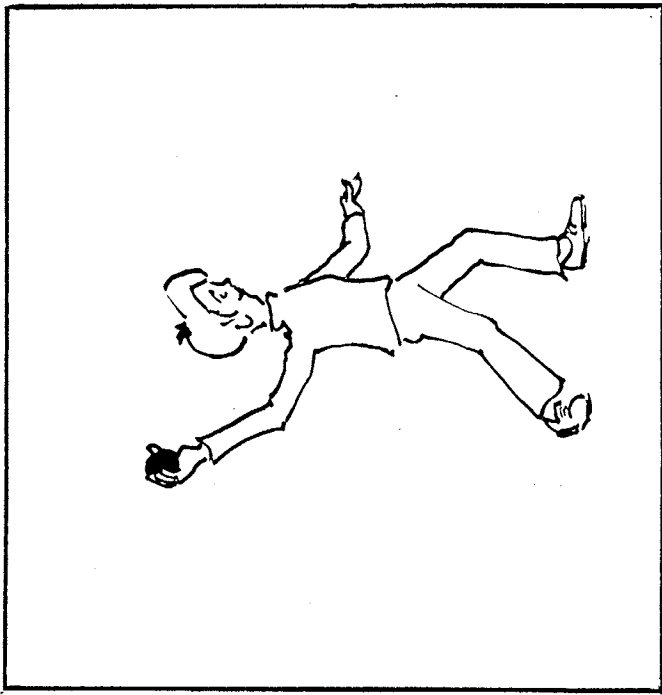
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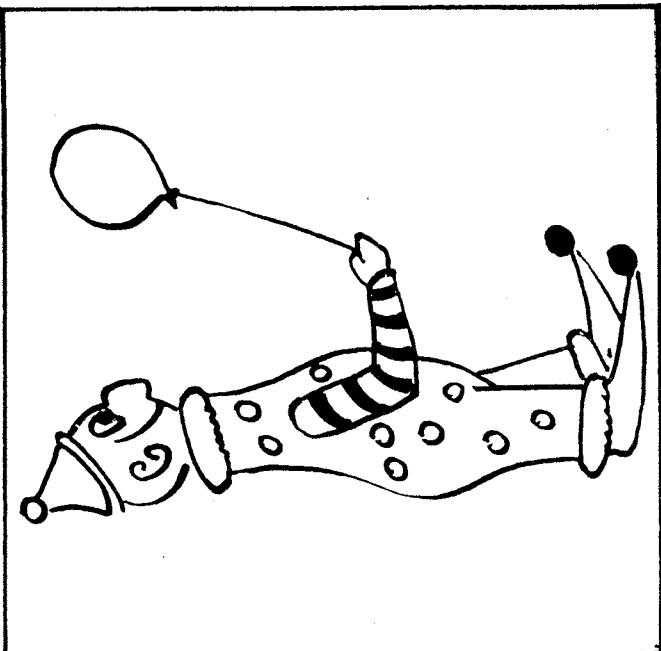
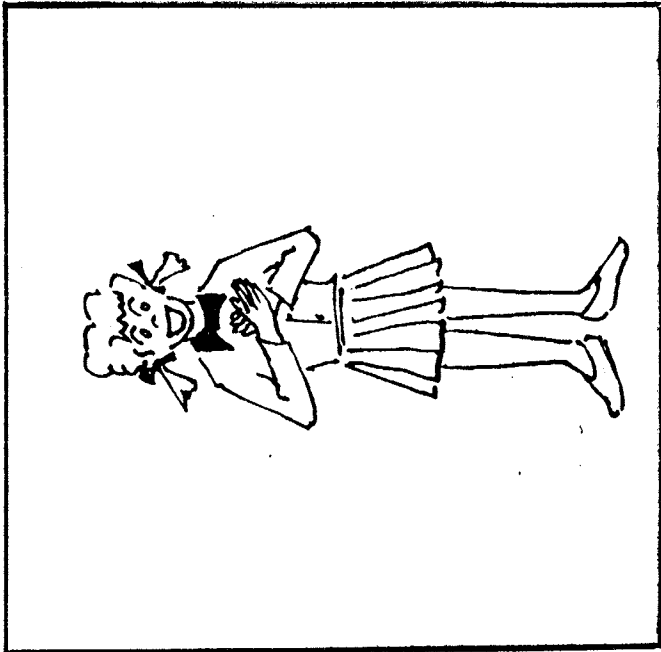
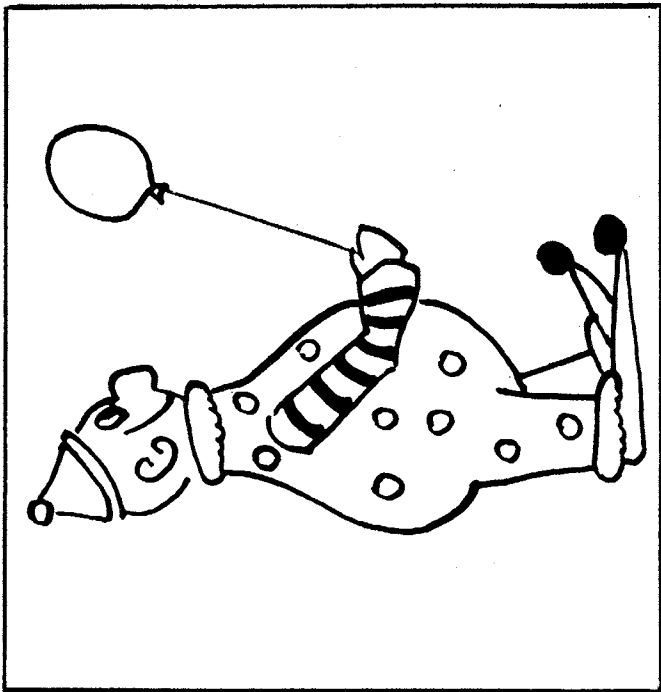
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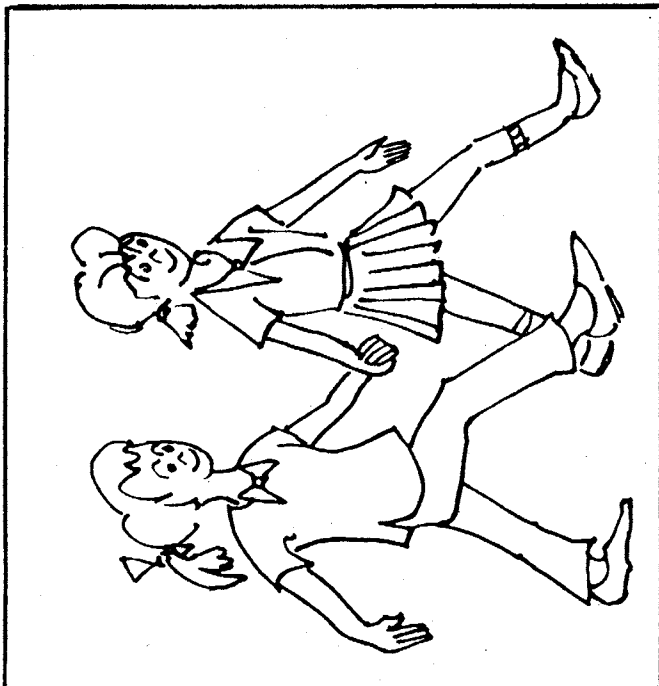
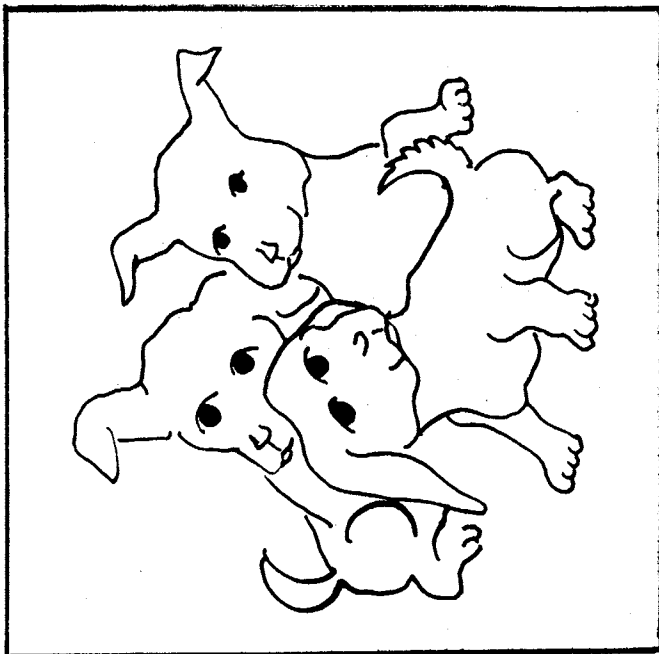
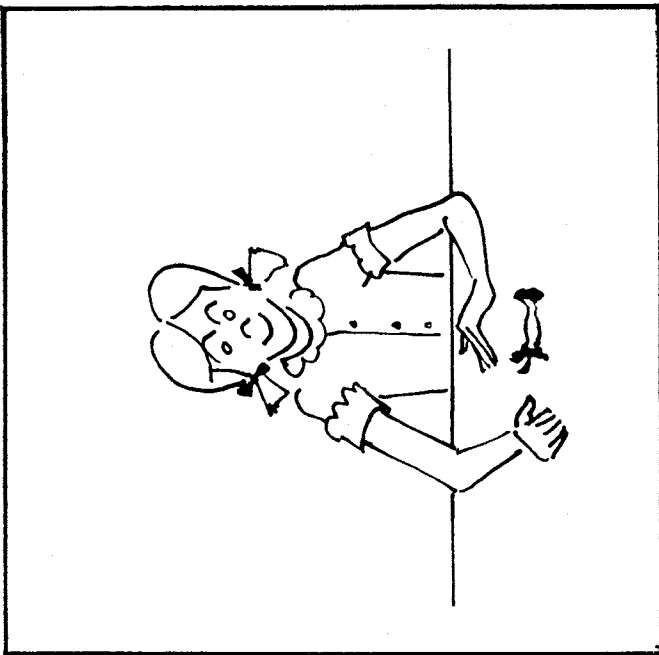


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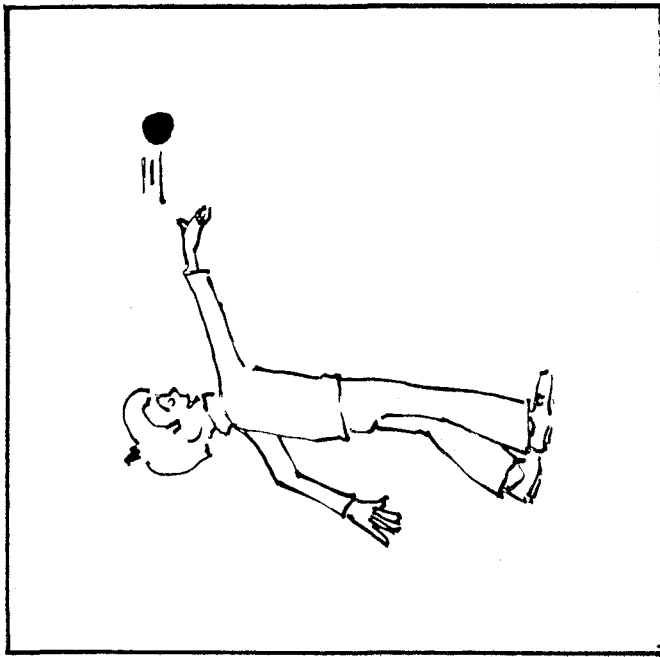
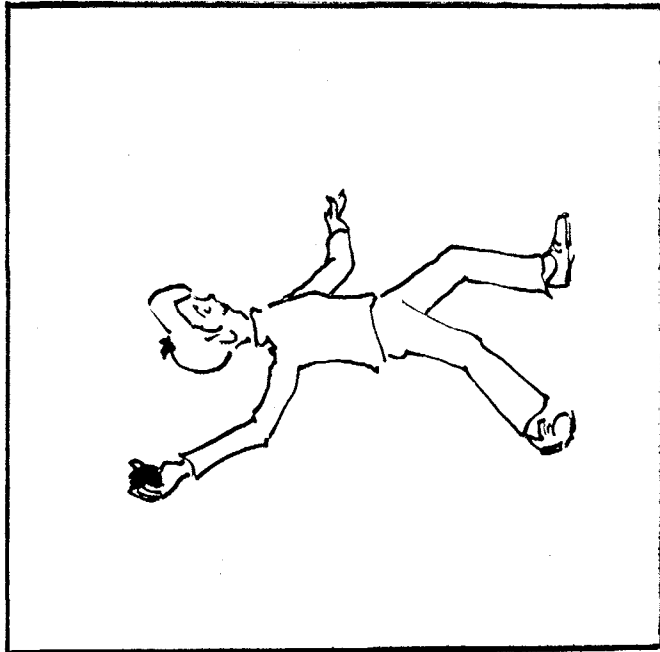
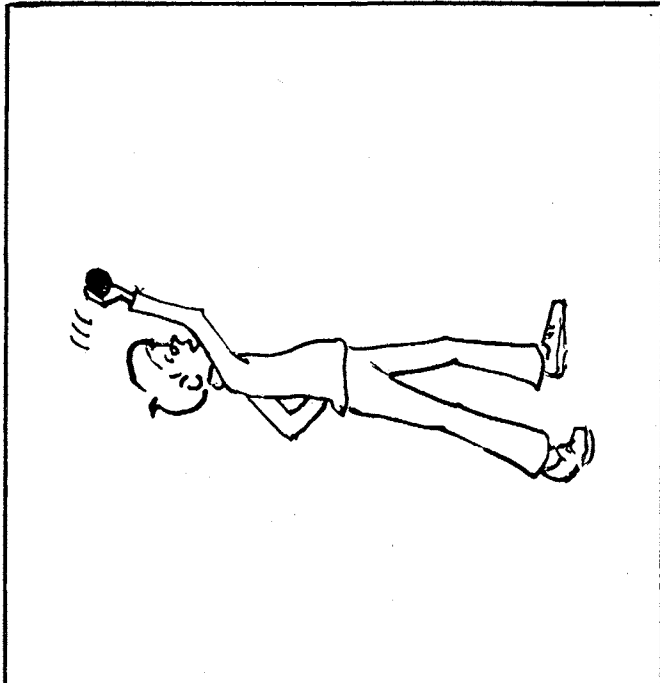


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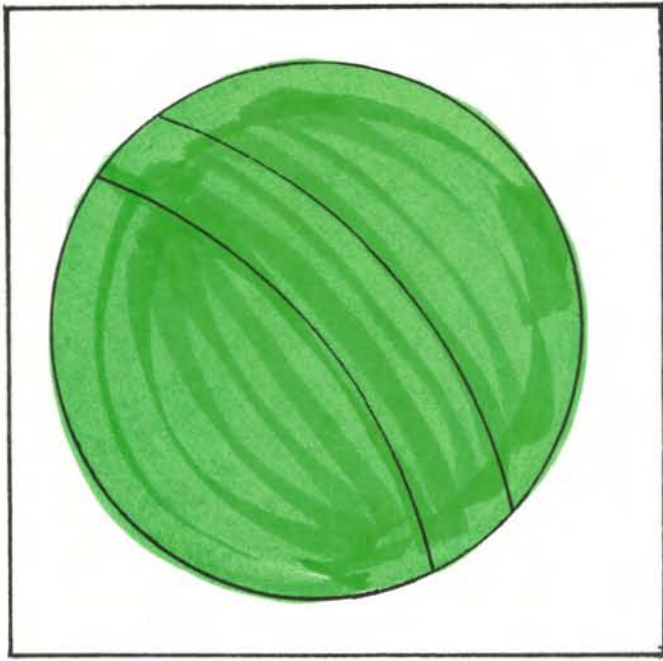
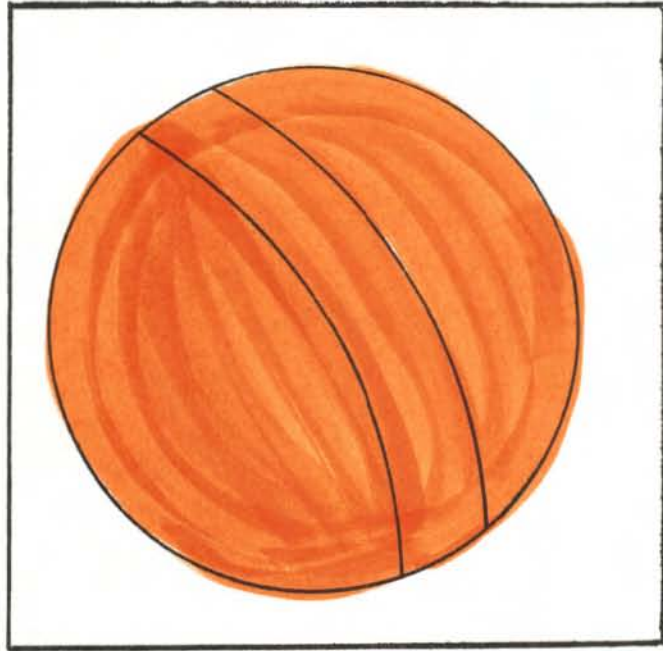
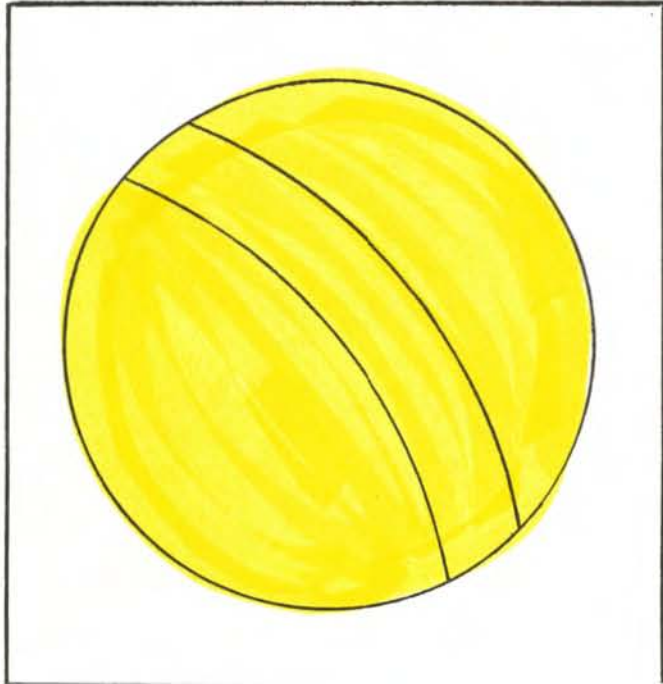
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*bl

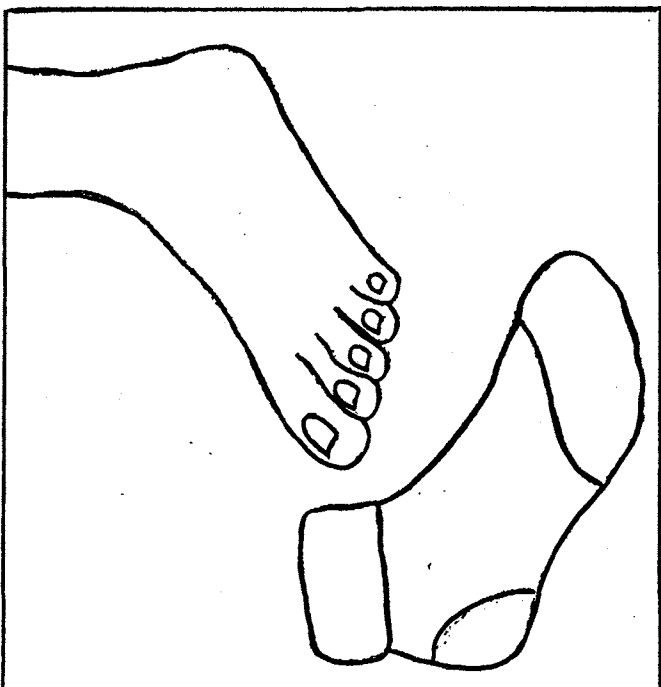
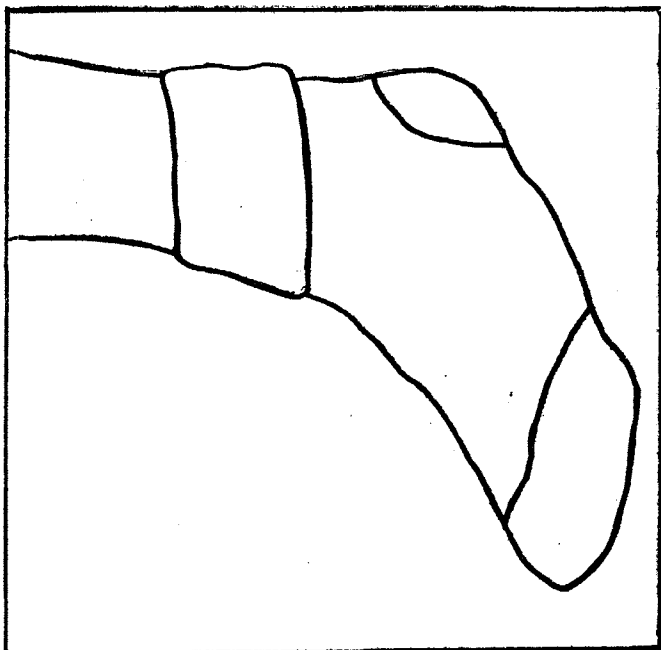
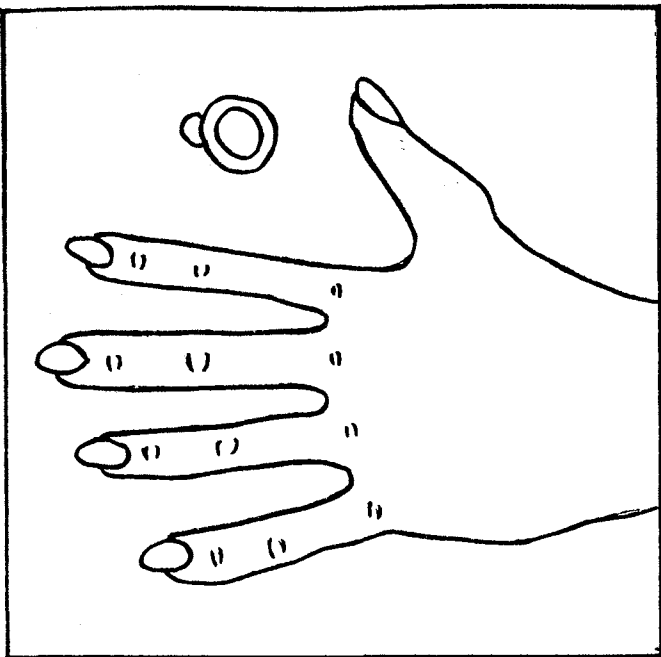


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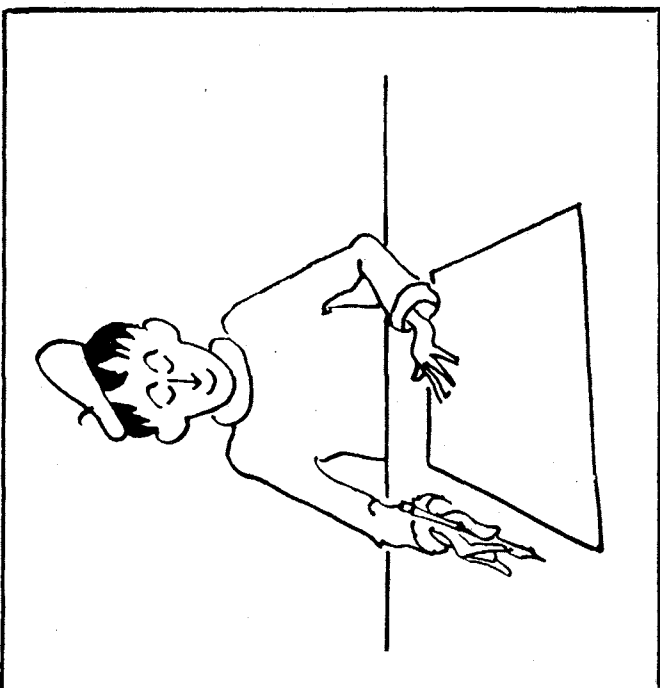
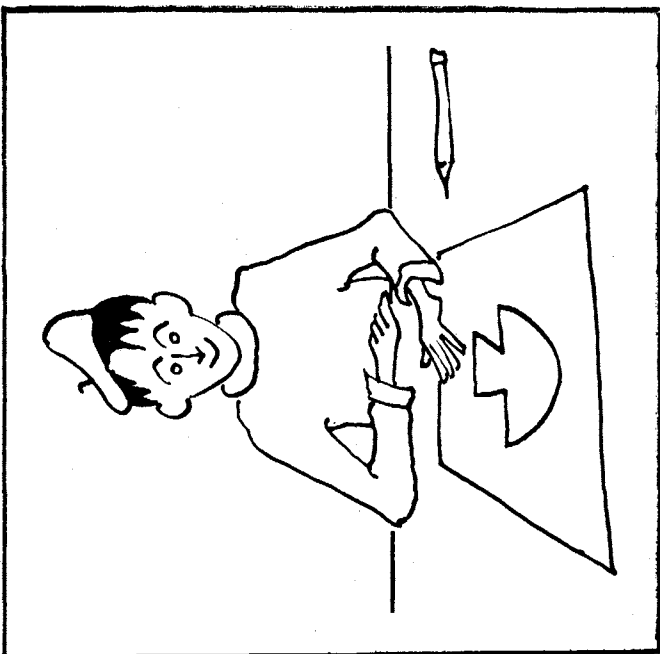
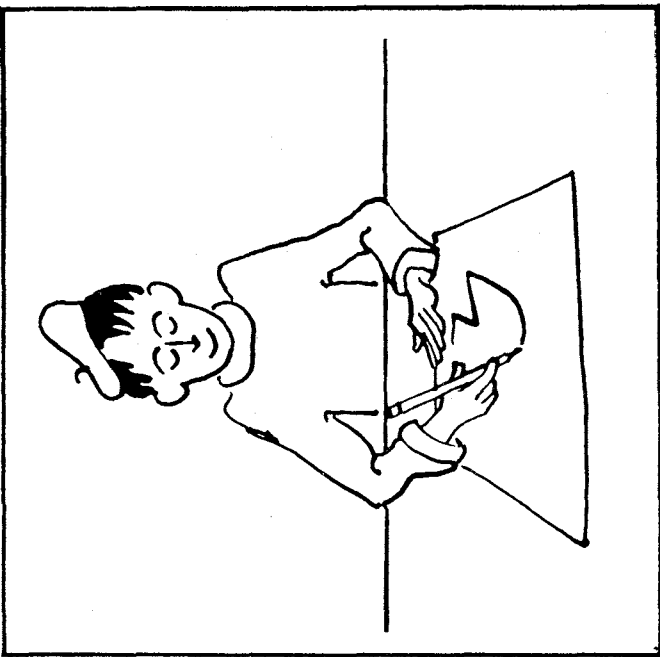


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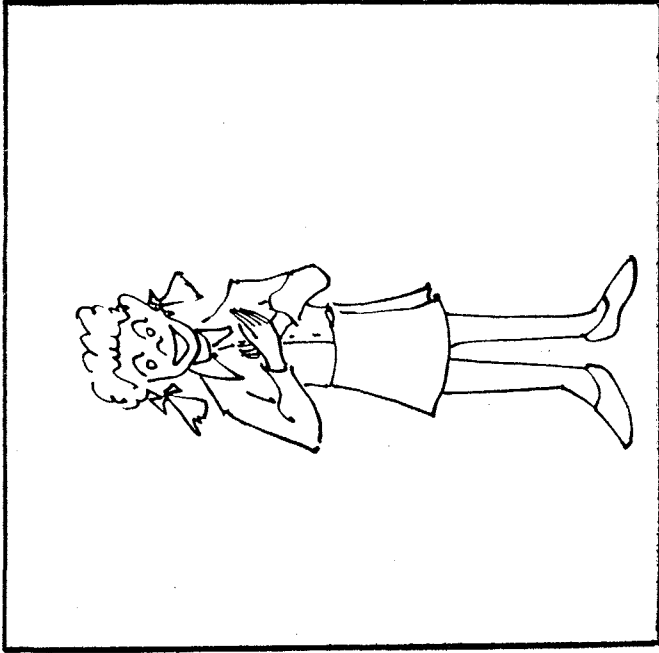
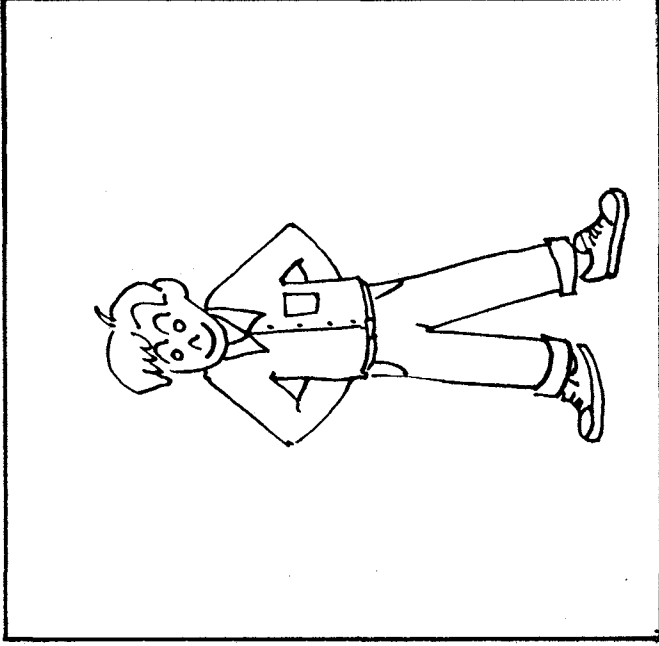
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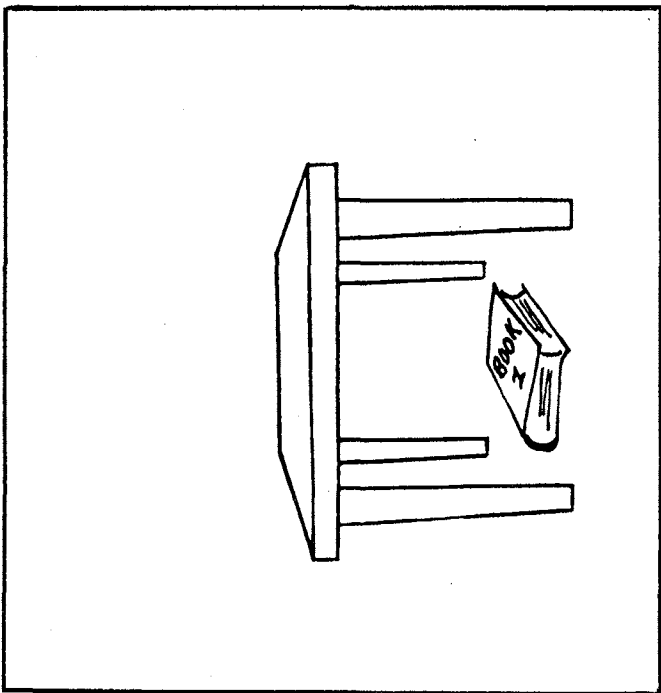
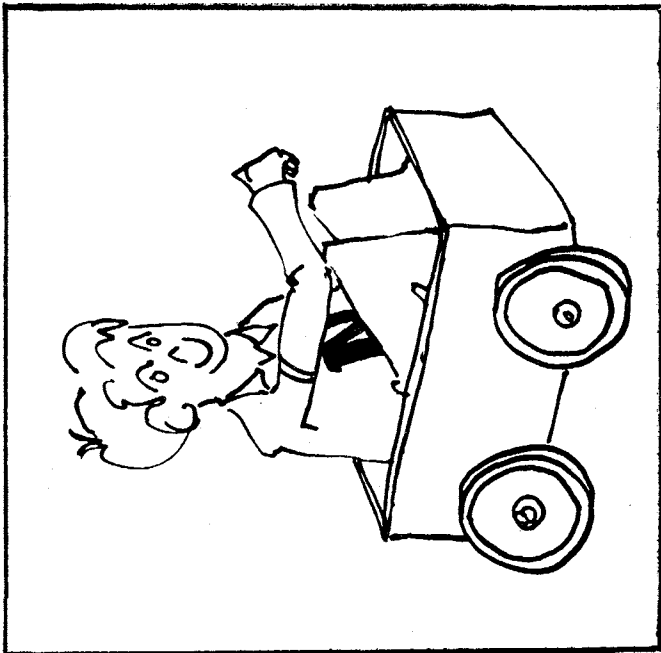
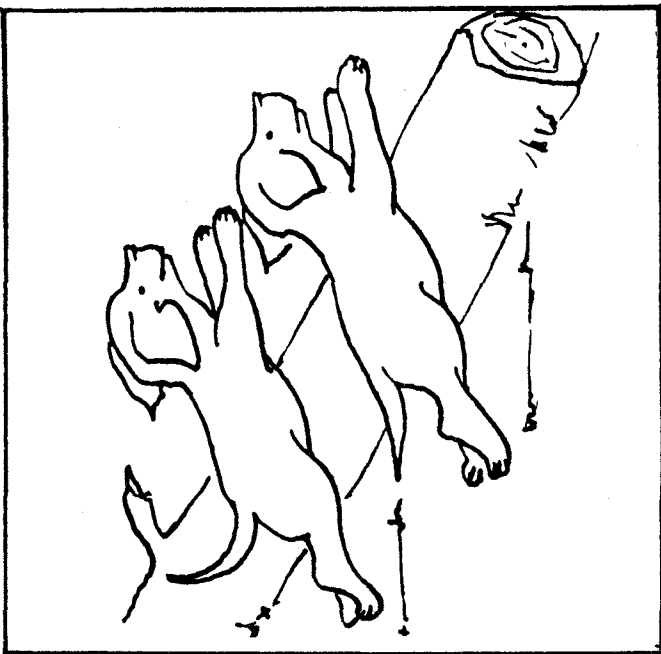
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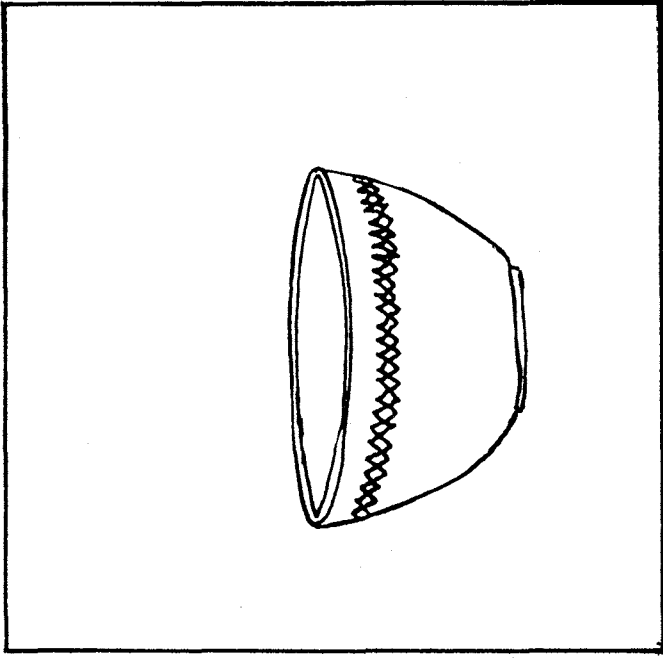
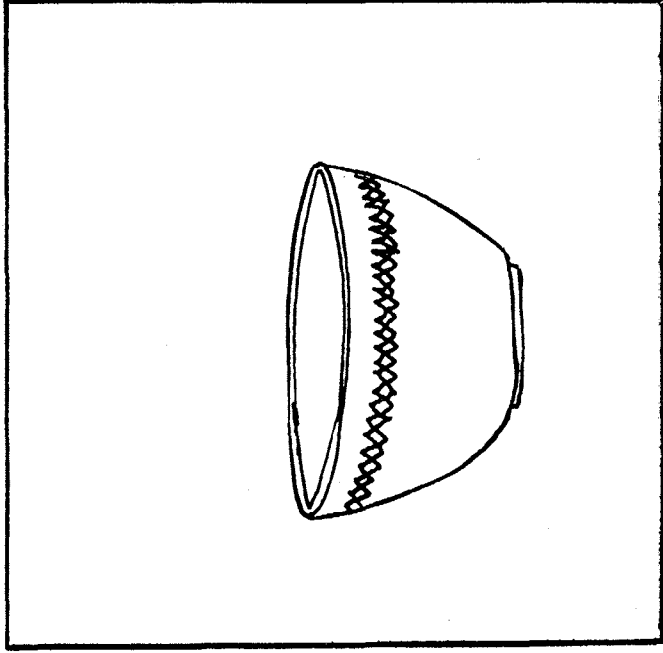
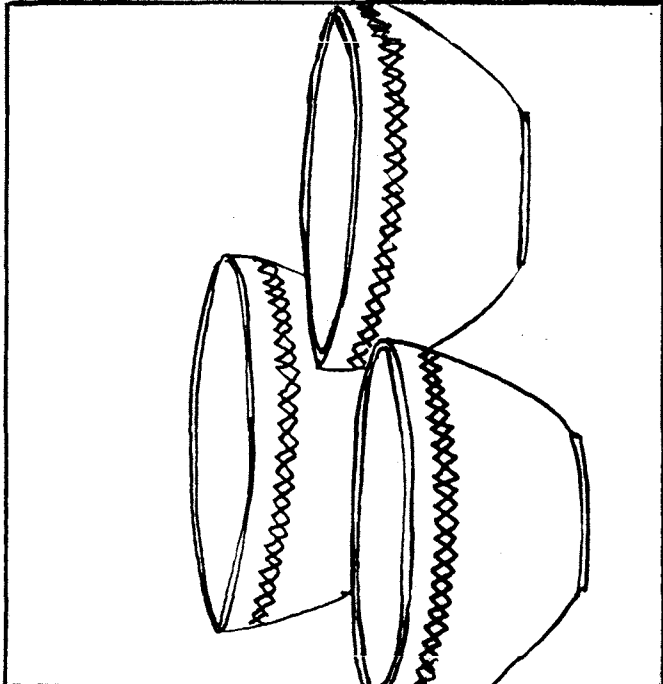


happier

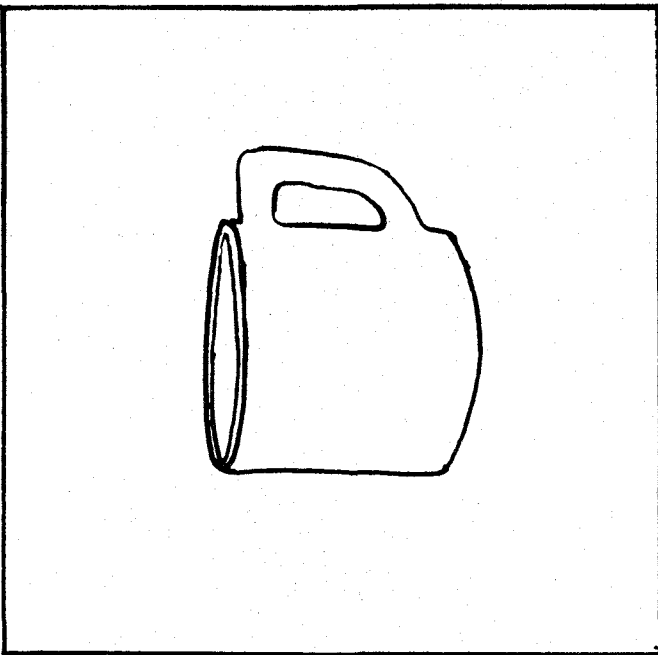
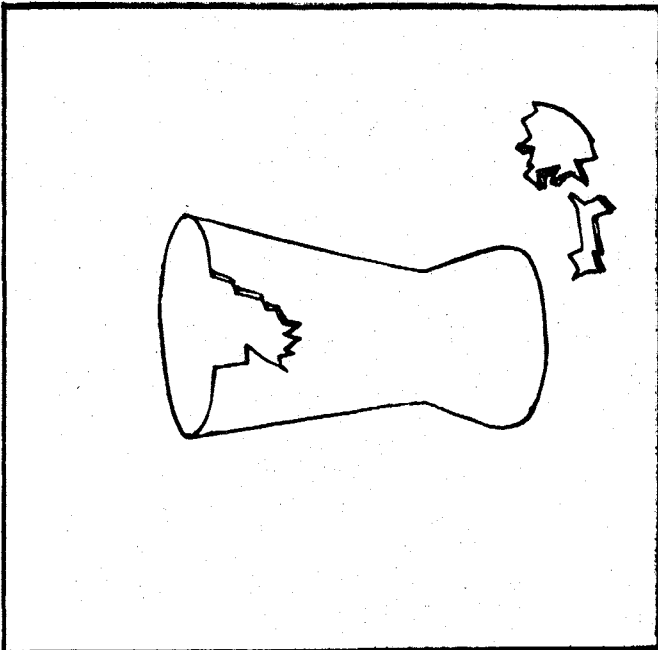
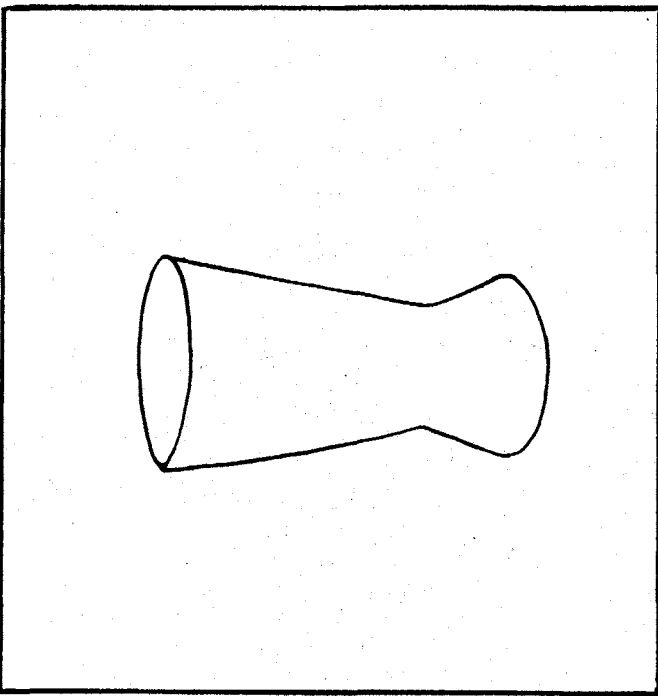


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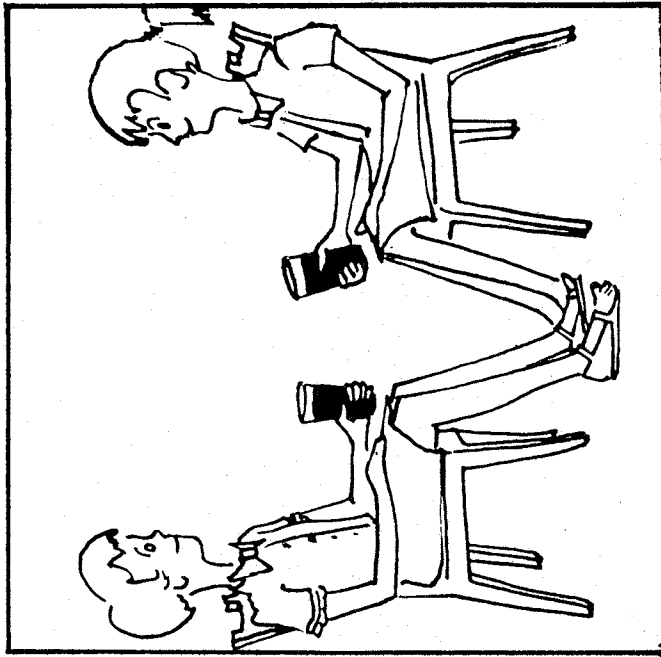
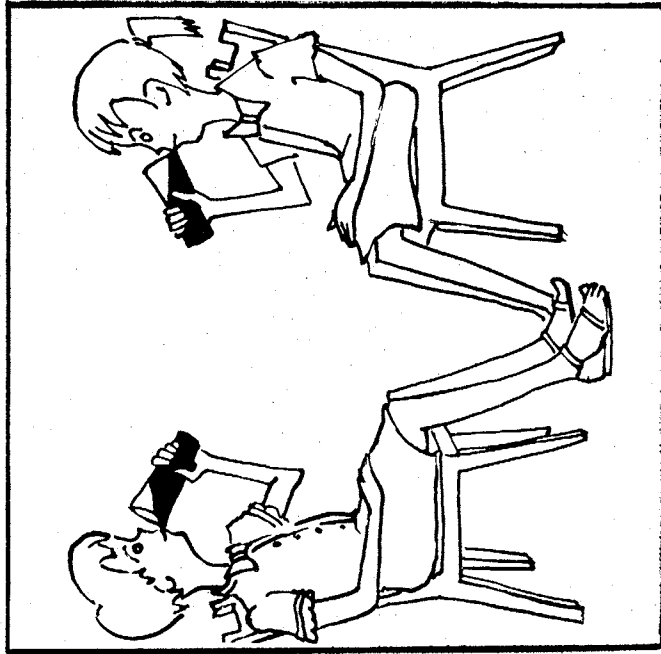
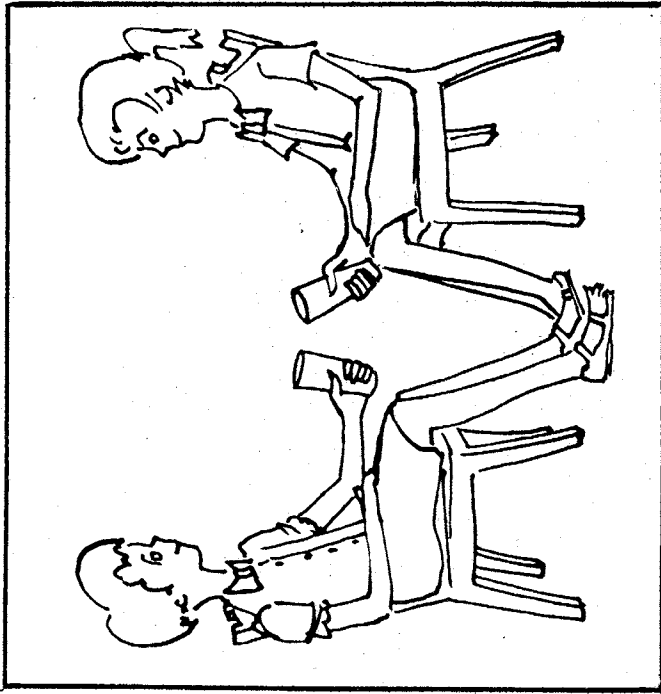




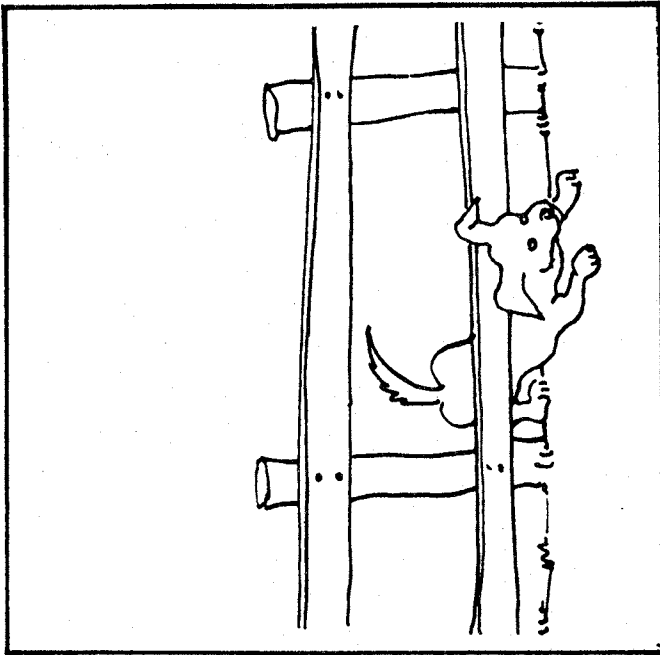
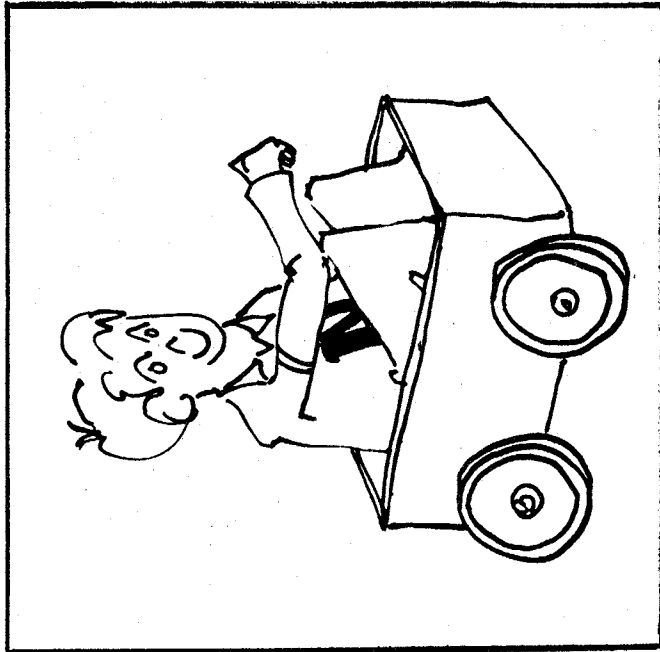
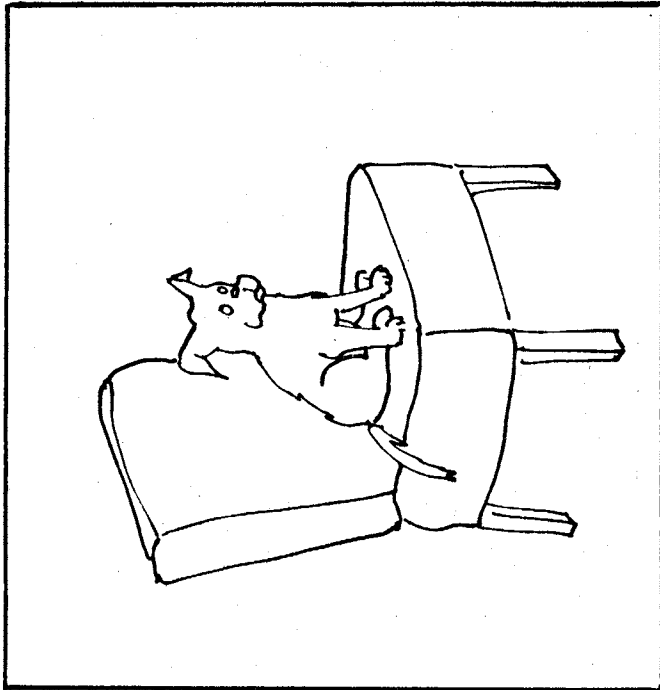
dishes



broken



will drink



under

pencils

