DOCUMENT RESUME

ED 147 011 PS 009 641

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TITLE Cognitive and Behavioral Distribution of Rewards: Developmental and Instructional Tests of Young Children's Understanding and Application of Some Principles of Equity. Final Report.
INSTITUTION Brigham Young Univ., Provo, Utah. Communications Research Center.
PUB DATE Aug 77
NOTE 188p.

EDRS PRICE MF-$0.83 HC-$10.03 Plus Postage.
DESCRIPTORS Age Differences; Cognitive Development; *Concept Formation; *Early Childhood Education; Elementary School Students; *Ethical Instruction; Preschool Children; Research; *Rewards; Test Construction; *Tests; *Values
IDENTIFIERS *Equity; Free Enterprise

ABSTRACT

Two studies attempted to determine: (1) at what age children understand and apply the principle of equity; and (2) whether theory based instruction is effective in helping young children understand the principle of equity. Further, do children exposed to such instruction perform better on a behavioral test than children not exposed to such instruction? Subjects in Study I were 115 children, preschool through second grade, from middle or upper class homes. Children were administered a 10-item objective test that measured their cognitive understanding of the rule of equity, and a two-phase behavioral test that measured application of the rule. Data were analyzed by social class, grade and sex. Results indicated a significant difference for grade: first and second grade children scored within the mastery zone showing they understood and could apply equity principles, kindergarten children scored only slightly below, and preschool children below, yet high enough to make them candidates for instruction. In Study II, 31 preschool children were randomly assigned to control and experimental groups by class and sex. Children in the experimental group received two lessons, each teaching two basic principles of equity. Lessons were taught using a question-answer format in which children answered questions concerning situations illustrated in pictures. An adult experimenter explained why each answer was right or wrong. Children were then administered the same two-part test used in Study I five to eight days after instruction. Results indicated that the experimental group scored within the mastery level while children in the control group did not. Results are discussed. Approximately 100 pages of appendices include the tests and instructional program used. (SB)

COGNITIVE AND BEHAVIORAL DISTRIBUTION OF REWARDS: DEVELOPMENTAL AND INSTRUCTIONAL TESTS OF YOUNG CHILDREN'S UNDERSTANDING AND APPLICATION OF SOME PRINCIPLES OF EQUITY

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FINAL REPORT

August 1977

This research was supported by a grant from Bonneville International through the Communication Research Center, College of Fine Arts, Brigham Young University. The assistance of Dr. Gordon Whiting, Dwayne Rogers, Al Golusin, Lisa Tensmeyer, Douglas Richards, and Tim Behrend in the conceptualization of the studies and the collection of data is gratefully acknowledged.

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There is growing public concern that the basic principles of free enterprise economics are not being taught effectively in our educational institutions and through the media. Some educators and leaders in the media and other sectors of public life fear that one of our potentially greatest teaching institutions, commercial television, is not only not teaching free enterprise economics, but is teaching a form of economics antithetical to it, Marxist economics.

The focus in recent years has been the teaching of economics at younger age levels and through a broader range of delivery systems. Television is undisputably an effective teaching medium, but it is expensive. Are there other effective and less expensive media that can be used for free enterprise instruction for young children? The studies reported herein attempt to at least partially answer this question.

One of the principles basic to free enterprise economics is the principle of equity. This principle states that "a person will seek a division of rewards (outcomes) in which the rewards are proportional to contributions (inputs) of each group member (Streator & Chertkoff, 1976, p. 800)." In economic parlance, this means that those who are most productive should get the most rewards. This principle is based on the assumption that all people have equal abilities as well as opportunities to produce in society. This is a false assumption. Obviously some people have greater ability than others, some have greater opportunities than others. Largely because of this inequality of ability and opportunity, economic systems such as Marxist economics are governed according to the principle that rewards should be distributed according to need, not according to one's productivity or effort. The arguments for the distribution of rewards according to input or effort rather than need, with suggested areas of compromise, are described in clear detail by such scholars as Friedman (1962) and Okun (1975). The facts remain that our democratic institutions are founded on the basis of free enterprise economics but that few Americans understand the very economic system upon which their way of life is based.

Until recently there had been very little research concerning the ability of children to deal with the principle of equity. Piaget (1932/1965), through an extensive interviewing technique with children, concluded that children do not understand and respond on the basis of the principle of equity until they can perceive the other person's perspective and until that perspective becomes of major concern to the child. Piaget, therefore, suggests that children do not act according to true equity (although his definition of the term is far more general than the one used in this paper) until they are 11 or 12 years of age. In more recent studies of positive justice, such as the fair distribution of rewards, Damon (1975, 1973, 1971) has found in dilemmas or moral conflict situations that children move through six stages before they are able to distribute rewards fairly (according to input). Children apparently reach the last stage at an earlier age than that suggested by Piaget.

While Piaget's and Damon's studies have attempted to determine the child's stages of reasoning relative to equity vs. equality, other recent studies have attempted to measure developmental trends in equity behavior in children. Most of these studies (e.g., Lane & Coon, 1972; Lerner, 1974; Leventhal & Anderson, 1970; Leventhal, Popp, & Sawyer, 1973) present a task to dyads of children where their output may be different or the same. The children are then asked to distribute rewards according to inputs on the tasks. Age, sex, and treatment differences have been found in these studies but the findings are inconsistent. In one study older children or one sex may tend to equality when distributing rewards compared to younger children or the other

sex, while another study may show a reversal of this trend. The studies are difficult to compare because they generally deal with different samples, different tasks, and/or different rewards.

Another problem is filtering out differences when the children are or are not recipients of rewards. Two basic treatment paradigms involve the children as recipients, the participant and negotiation paradigms. In the participant paradigm (e.g., Leventhal and Anderson, 1970) each child is asked to divide a real reward between himself and a fictitious partner when he is informed he either worked harder, not as hard, or the same as the fictitious partner. In the negotiation paradigm the partners are asked to arrive at a distribution of reward following effort on a task which is mutually acceptable to both members of the dyad. Both of these paradigms are confounded by the problem of self-interest because the children must not only decide appropriate rewards for others but for themselves.

Streator and Chertkoff (1976) conducted a study which included not only the participant and negotiation paradigms, but also a supervisor paradigm. In the supervisor paradigm the child is rewarded for a task and is then asked to distribute the rewards to two others depending on what they earned, thus eliminating the self-interest variable. Streator and Chertkoff found that older children (ages 8-9 and 12-13) have a tendency to favor equality (i.e., everyone gets the same reward regardless of input) while the younger children (ages 6-7) favored equity solutions. They also found that children in the participant condition who had less input or the same as other peers and children in the

negotiation-condition favored equality, while equity was the more frequent response of children who provided the greatest amount of input in the participant condition or who were in the supervisor condition. That is, when a child has greater input on a task than his peers or when he has no self-interest when distributing rewards, he tends to use an equitable principle of distribution. This is to be expected.

There are apparently no studies where children are formally taught the principles of equity and then tested on their ability to use principles of equity in objective (cognitive) and behavioral measures. In addition, children in these studies are exposed to only one instance where the principle of equity could be applied. This research attempts to fill the instructional and instance diversity gaps.

The principle of equity is not as simple and straightforward as it may seem at first glance. Shure (1968) has suggested at least three elements that may complicate the principle: ownership of a desired object, expenditure of effort, and obligation based on enjoyment of the benefits of an event. If a person owns a desired object that person has a "right" to keep the object and do whatever he wants with it regardless of someone else's desire to use it or keep it. Sometimes we say a person is selfish if he refuses to share the desired object with others, but he, nevertheless, has the right not to share. Equity means he keeps the reward for himself because he owns it. Whether or not he expended effort to obtain it and whether or not he shared it with others are irrelevant to the equity issue in this instance.

If one person engages in an activity that later requires assistance to clean up or whatever, that person is obligated to provide assistance but a person who did not engage in it is not obligated to do so. For example, if Mom and Dad throw a party for a few friends where their children are not invited, the children should not be expected to help clean up afterward. The equitable solution is for Mom and Dad to clean up because they enjoyed the benefits of the activity, not their children. We would likely label the act of assisting the parents by one of the children as generous. But, again, such generosity is irrelevant to the principle of equity.

This research focuses on the element of effort expended (input) and how rewards should be allocated relative to differences in effort expended on a variety of tasks. This study will not consider the elements of ownership nor of obligation based on enjoyment of given activities.

This research consisted of two studies designed to gather evidence related to the following questions: (1) At what age do young children understand and apply the basic equity principle fundamental to free-enterprise economics? (2) Is theory-based instruction efficient and effective in helping young children understand the principle of equity? (3) Do children exposed to theory-based instruction on the equity principle perform better on a behavioral test than children not exposed to such instruction? Study 1 was conducted to find evidence related to the first question. Study 2 was a follow-on study designed to find evidence related to the second and third questions.

STUDY 1

Method

Subjects

A total of 115 children, preschool through second grade, participated in this study. There were 35 preschool children, 26 kindergarten children, 31 first-grade children, and 23 second-grade children (see Table 1). Of these children 62 were male and 53 female. The preschool children attended the Child Development Laboratories at Brigham Young University. The kindergarten-through-second-grade children attended Rock Canyon Elementary School in the Provo School District in Provo, Utah. The mean age of the preschool children was 58 months, the mean age of the kindergarten children 72 months, the mean age of the first graders 84 months, and the mean age of the second graders was 95 months (see Table 2). The parents of the preschool children are students at the university or business and professional people, mostly Caucasian, from middle class or upper-middle class background. Most of the mothers are full-time homemakers. The children from the elementary school were in three of eight classrooms randomly selected to participate in this study. Each classroom had approximately an equal number of kindergarten, first-grade, and second-grade children. The preschool children were from two morning classes housed in on-campus laboratory facilities. The preschool groups were selected because no research was taking place in the classrooms at the time of this study and because morning groups fit the time schedules of the project personnel. Children in

both preschool groups, however, were selected randomly from a waiting list for assignment to their class room groups. The study was conducted during March and April of 1977.

TABLES 1 AND 2 HERE

Design

This is a descriptive study using measures of central tendency and Chi square. The data are reported by class, grade, and sex as in Tables 1 and 2.

Procedure

Pilot study.--Originally the pilot study was designed to try out part of the instruction in order to find out how the instruction needed to be changed to make it compatible with the developmental level of children between the ages of four and eight, the target audience for the study. The instructional program consisted of three different treatments to test the effectiveness of a rule-example-practice strategy approach (Vance, 1976) when prompts and feedback are or are not provided for the various elements of the design. It became apparent during trials with preschool and primary-grade children that the instruction was too complicated for preschool children but that most of the older children (about ages 7 and 8) seemed to have a good understanding of the principles being taught in the lessons before they received instruction. The instruction used drawings as the primary medium of instructional delivery along with verbal explanation, prompting, and feedback from the instructor. The pilot study convinced the project staff that before instruction could be

prepared for young children a pretest should be prepared that would test for the ability of young children to understand the following principles related to the rule of equity:

1. People who do more than others should get more reward.
2. People who do the same as others should get the same reward.
3. People who do nothing should get no reward.

Several problems presented themselves during the pilot study indicating guidelines to be used when preparing the pretest. Because children tend to notice facial expressions of characters in the drawings, regardless of whether or not the expressions are relevant to the problem, drawings for the pretest had to be made with neutral expressions on the faces of the characters. It was also found that narrative must include frequent breaks for responses from the child. The narrative preceding each request for response from the child should include starkly simple details and should repeat details before calling for a child response. Because young children have so little sophistication in basic concepts of math, it was found that, generally, more general quantitative terms such as "more" or "not as much" should be used in the verbal sections of the pretest rather than specific quantities such as "two dollars and five dollars." Changes were necessary on the drawings to make sure that only one distractor picture was provided for every stem and that the distractor picture was the same as the stem picture except for relevant variables that needed to be changed. Solid colors should be used and only for relevant variables. Colors are a way of focusing attention but

can be distracting if they emphasize irrelevant variables as well. This also meant that drawings had to be prepared that made the background extremely simple and free of detail in order to focus the child's attention on the foreground (relevant details). Adult humor is inappropriate in drawings or narrative because young children do not understand irony or sarcasm upon which so much adult humor is based. For instance, one of the pilot drawings showed a young child hurrying to get ready for bed. The artist, in an artistic attempt to dramatize how fast the child was working, drew three arms on the child. This disturbed most of the children who viewed the pilot drawings and distracted their attention from the relevant variables in the instructional item. It was apparent that a side-by-side position of child and examiner was more satisfactory than having them face each other across the table. This would make it possible for the examiner to follow along with the child in his/her booklet as the test proceeded. It was also found that before the child was asked to make a response on a test item he/she should repeat the basic information in the stem item (i.e., the nature of the task, the nature of the reward, who did what).

Development of the pretest.--A pretest of the equity principles was prepared consisting of two parts (see Appendix A). The first part is a 10-item objective (cognitive) test where the child is informed on each test instance who the people are in the example, what the task is, what the reward will be for doing the task, and to what extent the people in the example did the task. For instance, the stem of Item 1 of the pretest shows two

sisters making their beds with their mother observing in the doorway. The narrative reads as follows:

> These girls are learning to make their beds. Every time each girl makes her bed her mother gives her a tootsie roll. Each girl made her bed the same number of times. What are the girls learning to do? (child responds) What does each girl get when she makes her bed? (child responds) Did one girl make her bed more than the other?

After the child responds to these three questions and any misunderstandings about the stem picture are clarified, the page is turned to the distractor picture, which shows the same scene as the stem picture with the exception that the older sister is shown with three tootsie rolls in one of her hands and the younger sister is shown with the same number of tootsie rolls. The narrative for the distractor picture reads as follows:

> The older sister (point to girl in blue) made her bed as many times as the younger sister (point to girl in pink). The older sister (point) has as many tootsie rolls (point) as the younger sister (point to tootsie rolls of girl in pink). Is this right for both sisters to have the same number of tootsie rolls? (child responds) Tell me why you think so. (child responds)

The examiner indicates on the pretest answer sheet (Appendix B) whether the child answered yes or no and writes the child's reason why.

The 10 items on the objective pretest were developed to include a variety of real-life instances involving two or more people in each instance. The relationships of the people in each instance varied (e.g., brothers and sisters, peers, child and adult, adult and adult, friends of different ages, etc.), the number of people in each instance varied, the tasks varied, and the rewards varied (i.e., money was only one of the possible rewards used

throughout the test). In addition, five of the test items were varied in difficulty from the other five. That is, five items (Items 4, 6, 7, 8, and 10) consisted of what were considered easier subject matter in that they dealt only with no work performed by one of the persons vs. some work performed by the other person(s) or with the same amount of work performed by all of the persons in the instance. The allocation of reward was to one person only in the instance or to both persons equally. These items were considered easier than Items 1, 2, 3, 5, and 9 where the items dealt with situations where one person did some work and one or more other individuals did more work and where rewards were allocated either equitably or where everyone got the same reward regardless of effort or where no one received rewards regardless of effort.

The second part of the pretest was the behavioral (affective) test consisting of two phases (see Appendix A). In Phase 1 the child was shown some dot-to-dot pictures and told that s/he could draw as fast as possible to see how many s/he could finish before the examiner called time. The child was allowed to complete only one picture, the clown picture (see Appendix C). The child was then shown two other completed dot-to-dot pictures, the clown picture and a girl with umbrella (see Appendix D), made by a fictitious child of the same age. The child was asked to divide three identical marbles (if subject was male) or three identical balloons (if subject was female) so the fictitious child would get what prize s/he should have for drawing one picture. The child was then asked to give the reason for

dividing the "prize" the way s/he did. During Phase 2 of the behavioral part of the pretest the child was shown two completed dot-to-dot drawings (the clown and girl-with-umbrella dot-to-dot pictures as in Appendices C and D) made by one fictitious child and one completed dot-to-dot drawing (the clown picture in Appendix C) made by another fictitious child. The child was then asked to divide the same prize (marbles or balloons) between the two fictitious children that he used before but with different prize items. Again the child was asked to state his reasons for dividing the prize the way s/he did. The second part of the pretest was designed to get a self-interest behavioral measure of equity (Phase 1) as well as a non-self-interest behavioral measure of equity (Phase 2) as suggested in the study by Streator and Cherkoff (1976).

A brief trial of the pretest was conducted with 10 children between the ages of 4 and 8 who would not appear in the study sample. Minor changes were made before the actual pretest study was conducted with the study sample of children.

Administering the pretest to the study sample.--The principal investigator and an honors undergraduate student administered the pretest to the children in the three classrooms at the elementary school. All the children in one classroom would be tested before testing was done in another classroom. The order of classrooms for testing was determined by random selection. Testing was done individually in various places in the school where privacy during testing could be guaranteed. The principal investigator

presented a 20-minute musical instrument demonstration to the children in each classroom and then talked to the children about what to expect during the test before testing commenced in each class.

Two honors undergraduate students administered the pretest to the children in the two preschool classrooms on the university campus. Both examiners spent several hours in the classrooms getting acquainted with the children before they began the administration of the pretest.

The children were allowed to keep their drawings and prizes from the behavioral part of the pretest following the testing period. They were encouraged to put the prizes and drawings in their lockers so they wouldn't get lost. This would prevent discussion of the test and the prizes among children who had not yet been tested. This strategy worked well with all of the children.

There were no children in the classrooms at the elementary school who refused to accompany the examiner for testing. However, five preschool children, two in one class and three in the other, refused to be tested. Data are reported only for those children who were tested.

Results

The primary purpose of the pretest was to find out at what age young children understand and apply the rule of equity. The 10-item objective part of the pretest measured cognitive understanding of the rule. The two-phase behavioral part of the pretest measured application of the rule.

Objective Pretest Results.--Table 3 shows the mean scores of the children in the study sample by class, grade and sex. Of 10 items possible on this part of the test, the mean score for preschool children was 6.34, with girls tending to score on the average slightly higher than the boys. The mean score for the kindergarten children was 7.85, with boys tending to score higher on the average than girls. The mean score for first-grade children was 9.16, with girls scoring only slightly higher than boys on the average. The mean score for second-grade children was 9.3, with boys scoring slightly higher than girls on the average. The trend is for mean scores to go up with grade (or age).

TABLE 3 HERE.

If a child achieved a score of 8 or above on the objective pretest it was assumed the child had mastered the equity rule in terms of his cognitive understanding. If he scored 3 or less it was assumed the rule is too difficult for the child to learn, even with training. At any rate, training would not be worth the effort involved. If a child scored between 3 and 7 items correct, it was assumed the child would be a good candidate for instruction relative to the rule of equity. Figure 1 illustrates graphically how the mean scores of the children by grade fall into the various zones. First and second graders fell well within the mastery zone. Kindergarten children were only slightly below the mastery zone. Preschool children appear to be well

within the instruction zone. It would appear that preschool children would be good candidates for instruction relative to the equity rule. Kindergarten children, on the average, are so close to mastery that instruction probably would not be an efficient use of time or effort.

FIGURE 1 HERE

Five items on the objective part of the pretest were considered "easy" (Items 4, 6, 7, 8 and 10) and five were considered of "medium" difficulty (Items 1, 2, 3, 5, and 9). The mean scores on the "easy" items by class, grade, and sex appear in Table 4. The mean scores on the "medium" difficult items by class, grade, and sex appear in Table 5. It appears the "easy" items were no more easy than the "medium" items. They simply dealt with different types of instances.

TABLES 4 AND 5 HERE

Behavior Pretest Results.--In both the "participant" and "supervisor" phases of the behavior pretest there were a total of three prizes (either balloons or marbles depending on sex of subject) that could be distributed for three pieces of work (the dot-to-dot pictures). In other words, there were the same number of prizes as pictures during each phase. The child could distribute the three prizes during each phase in any one of the following combinations.

	Combination No.	One picture	Two Pictures	Left Over
(Equitable)	1	1	2	0
(Equality)	2	1	1	1
	3	0	1	2
	4	1	0	2
	5	0	0	3
	6	0	2	1
	7	0	3	0
	8	2	0	1
	9	3	0	0
	10	2	1	0

Inequitable combinations used by the children included Combinations No. 5 (0-0), No. 7 (0-3), No. 9 (3-0), and No. 10 (2-1). Combinations 5, 7 and 9 were rarely used, while No. 10 was the most frequent inequitable combination used in all grades and by each sex.

Combination No. 1 is considered equitable distribution of the rewards. Combination 2 is considered equal distribution of the rewards (with one reward left over). Table 6 shows the frequency of children on the "participant" phase of the behavior pretest by class, grade, and sex who distributed rewards equitably, equally, and in some other way. A x^2 test for the significance of interactions was not possible since the expected levels in many cells would have been less than the required five in such a test. Therefore, columns "equal" and "other" were combined into the "other" category and separate x^2 tests were performed on as many of the main effects as possible. With the exception of the youngest children in the study (Classes 1 and 2 and preschool children), reward distributions other than equity occurred relatively little. Chertkoff and Streator (1976) suggest young children may not distribute

rewards as equitably as older children because (1) they lack an internal standard of what constitutes a fair payoff, or (2) they may have misunderstood the directions. This also may mean that older children are more susceptible to perceived social pressure when an adult is present than are preschool children.

TABLE 6 HERE

There was no significant effect for sex, $x^2(1) = .0019$, nor was there a significant effect for preschool groups (Class 1 and Class 2), $x^2(1) = 3.24$. There was a significant effect for grade when comparing preschool with kindergarten ($x^2 = 4.63$, $p < .05$) with kindergarten children tending to distribute rewards more equitably. When kindergarten was compared with first and second grade combined there was no significant difference ($x^2(1) = .54$). However, when preschool was compared with first and second grades combined the difference was significant ($x^2(1) = 11.9$, $p < .01$). When preschool was compared with kindergarten, first grade and second grade combined again the difference was significant ($x^2(1) = 12.48$, $p < .01$). Kindergarten, first grade and second-grade children tend to distribute rewards equitably while preschool children are almost as likely to distribute rewards other than equitably as they are to distribute them equitably. Very few children (5 out of 115 children) distributed rewards equally (the 1-1-1 combination). This may have been because of the small and uneven number of rewards for distribution (i.e., 3).

Table 7 is similar to Table 6 except that it shows the performance of children on the "supervisor" phase of the behavioral posttest. Again because expected frequencies often did not achieve 5 or more, x^2 tests of significance of interaction were not possible. Some main effects comparisons were made but none were significant, although the comparison between preschool and kindergarten approached significance (i.e., $x^2(1) = 3.77$ whereas $p < .05 = 3.84$). Visual inspection of the frequencies in Table 7 suggest frequency patterns on the "supervisor" behavior pretest similar to those on the "participant" pretest. Even though the "supervisor" phase is designed to eliminate self-interest, it may be that with an adult observing and so few rewards to distribute it makes little difference in type of distribution (equitable or otherwise) whether the child is involved in one phase or the other.

TABLE 7 HERE

The results of the behavior pretest indicate that, regardless of self-interest, kindergarten, first-grade, and second-grade children tend to perform equitably in the distribution of rewards while preschool children do not.

The "why" answers of the children could not be satisfactorily coded at the time this report was written. Therefore, the data relative to the reasons children gave for their equitable or nonequitable choices are not included in this report.

Conclusions

The data from this study indicate that children of kindergarten age and above understand and apply the equity principles dealt with in the pretest. The objective and behavioral scores of preschool children indicate that children who are age four and in their early fives do not understand nor apply the equity principles dealt with in the pretest but are well within the instructional range. Therefore, Study 2 was conducted with preschool children.

STUDY 2

Method

Subjects

A total of 31 children participated in this experimental study, of which 15 were boys and 16 were girls. The children attended the afternoon classes in the Child Development Laboratories at Brigham Young University. Two classes of children were included in the study. The children were assigned randomly to the experimental and control groups by class and sex. Table 8 shows the number of children in the study by treatment, class and sex. The mean age of the children in the study was 50.3 months. Table 9 shows the mean ages of the children in the study by treatment, class and sex. The children come from middle- or upper-middle-class homes where most of the mothers are full-time homemakers, and one or both parents are students

or the father is a college professor or a business executive or blue-collar worker in local industry. Two of the children were Polynesian and all others were Caucasian. The two afternoon classes in the laboratories were selected for study because less research was taking place in those classes than in the two morning groups. The two classes also met at a time convenient for treatment and testing by undergraduate honors students who were the experimenters and examiners in the study. The children in both classes had been selected at random from waiting lists for inclusion in the laboratory groups. The study was conducted during Spring Term (May and June) at the university when new children enter the laboratories and when the mean age of the children in each class is usually several months less than the average for children who attend classes during the fall and winter semesters at the university.

TABLES 8 AND 9 HERE

Design

This study includes a 2 x 2 x 2 factorial posttest-only control-group design (Campbell & Stanley, 1963). The experimental factors are treatment, class and sex. Analysis of variance on mean scores and chi-square on frequency data were the statistics used to analyze the data in this study.

Procedure

Experimental treatment condition.--Using an instructional strategy design proposed by Vance (1976) two equity lessons were produced for use with the children in the experimental treatment condition. The basic strategy involved examples and practice items, with the rules embedded within the example prompts and practice feedback. The instructional display mode selected was a combination of iconic and symbolic modes, with colored drawings as the iconic mode and narrative, prompts, and feedback from the instructor in verbal mode. The first lesson was designed to teach the following principles of equity: (1) When a person does the required task he should get the promised reward; (2) if a person does not do the required task he should not get the promised reward. Six basic situations were used in the first lesson. Three of the situations were used for example items and included two or more matched nonexamples for each situation. Three of the situations were used for practice items. The second lesson was designed to teach the following principles of equity: (1) if a person does more work than another on the same task the person who did the most work should get the most reward; (2) if two or more persons do exactly the same task they should get exactly the same reward. Again six basic situations were used in the lesson, with three used for example items and including two or more matched nonexamples for each situation. Three of the situations were used for practice items. Both lessons appear in Appendix E. A ample example lesson item is as follows:

(E shows a picture of a boy and a lawn mower in the top half and another boy with a lawn mower in the lower half.) THESE TWO BOYS ARE BROTHERS. THIS ONE (point to boy in top half) IS THE OLDER BROTHER. THIS BOY (point to top half) IS SUPPOSED TO MOW THE FRONT LAWN. THIS BOY (point to bottom half) IS SUPPOSED TO MOW THE BACK LAWN. EACH BOY GETS ONE DOLLAR IF HE MOWS THE LAWN. THIS BOY (point to top half) DID NOT MOW THE LAWN. THIS BOY (point to bottom half) DID MOW THE LAWN.

(Point to a child) WHAT ARE THESE BOYS SUPPOSED TO BE DOING? (Child responds)

If correct: YES. THEY'RE SUPPOSED TO MOW THE LAWN.
If incorrect: NO. THEY'RE SUPPOSED TO MOW THE LAWN. WHAT ARE THEY SUPPOSED TO DO? (Child responds; reinforce).

(Point to another child) WHAT WILL EACH BOY GET IF HE DOES HIS JOB? (Child responds)

If correct: YES, HE WILL GET ONE DOLLAR.
If incorrect: NO, HE WILL GET ONE DOLLAR. WHAT WILL HE GET? (Child responds; reinforce).

(Point to another child) ONLY ONE BOY DID WHAT HE WAS SUPPOSED TO DO. POINT TO THE BOY WHO MOWED THE LAWN. (Child responds)

If correct: YES, THIS BOY (point to lower half) MOWED THE LAWN AND THIS BOY (point to top half) DID NOT MOW THE LAWN. NOW, SHOW ME WHICH BOY MOWED THE LAWN. (Child responds; reinforce)

The experimenter turns the page which shows a similar picture to the first one but the child in the lower half has a one-dollar bill in his hand. The following narrative is used with the picture.

(Point to boy in top half) THIS BOY DID NOT MOW THE LAWN SO HE DOESN'T GET ANY MONEY. THIS BOY (point to boy in lower half) DID MOW THE LAWN SO IT IS RIGHT THAT HE SHOULD HAVE ONE DOLLAR.

(Point to a child) TELL ME WHY THIS BOY (point lower half) HAS ONE DOLLAR BUT THIS BOY (point top half) HAS NO MONEY. (Child responds)

If correct: YES, THIS BOY (point lower half) MOWED THE LAWN BUT THIS BOY (point to top half) DID NOT.

If incorrect: NO, THIS BOY (point to lower half) MOWED THE LAWN BUT THIS BOY (point to lower half) DID NOT. NOW TELL ME WHY THIS BOY (point to lower half) HAS ONE DOLLAR BUT THIS BOY (point to top half) HAS NO MONEY. (Child responds; reinforce)

The page is turned to show another similar picture, a matched nonexample, where the boy in the top half has a one-dollar bill in his hand while the boy in the bottom half has no money. Similar dialogue is used to help the child understand why this is not an equitable distribution of the reward.

The following is an example of a practice situation used in Lesson 2.

(A picture is shown of two grandmothers baking cookies. The grandmother in the top half has two plates of cookies on the counter as does the grandmother in the bottom half.) THESE TWO WOMEN ARE GRANDMOTHERS (point). THEY ARE BAKING COOKIES TO SELL AT A BAKE SALE. THEY GET ONE DOLLAR FOR EACH PLATE OF COOKIES THEY MAKE. BOTH GRANDMOTHERS MADE TWO PLATES OF COOKIES EACH (point to the two plates of cookies in each half of the picture).

(Point to a child) TELL ME WHAT THESE GRANDMOTHERS ARE MAKING. (Child responds)

If correct: YES. THEY ARE MAKING COOKIES TO SELL AT A BAKE SALE.

If incorrect: NO. THEY ARE MAKING COOKIES TO SELL AT A BAKE SALE. WHAT ARE THEY MAKING? (Child responds; reinforce)

(Point to another child) WHAT WILL THE GRANDMOTHERS GET FOR EACH PLATE OF COOKIES THEY MAKE? (Child responds)

If correct: YES. THEY GET ONE DOLLAR FOR EACH PLATE OF COOKIES THEY MAKE.

If incorrect: NO. THEY GET ONE DOLLAR FOR EACH PLATE OF COOKIES THEY MAKE. WHAT WILL THEY GET FOR EACH PLATE OF COOKIES THEY MAKE? (Child responds; reinforce)

(Point to another child) DID ONE GRANDMOTHER MAKE MORE COOKIES THAN THE OTHER? (Child responds)

If correct: YOU ARE CORRECT. BOTH GRANDMOTHERS MADE TWO PLATES OF COOKIES.

If incorrect: NO. BOTH GRANDMOTHERS MADE TWO PLATES OF COOKIES. NOW TELL ME IF ONE GRANDMOTHER MADE MORE COOKIES THAN THE OTHER. (Child responds; reinforce)

The page is turned showing a similar picture. However, the grandmother in the top half has two dollar bills in her hand while the grandmother in the bottom half has no money. The narration is as follows:

BOTH GRANDMOTHERS MADE TWO PLATES OF COOKIES EACH (point to cookies in top and bottom half). THIS GRANDMOTHER (point to woman with money) RECEIVED TWO DOLLARS FOR HER COOKIES. THIS GRANDMOTHER (point to woman without money) DID NOT RECEIVE ANY MONEY FOR HER COOKIES.

(Point to a child) IS IT RIGHT FOR THIS GRANDMOTHER (point to top half) TO GET MONEY FOR HER COOKIES BUT FOR THIS GRANDMOTHER (point to bottom half) NOT TO GET ANY MONEY FOR HER COOKIES? (Child responds)

If correct: YOU ARE CORRECT. IT IS NOT RIGHT FOR THIS GRANDMOTHER NOT TO GET ANY MONEY FOR HER COOKIES (point to woman in lower half) BECAUSE SHE MADE AS MANY COOKIES AS THE OTHER GRANDMOTHER.

If incorrect: NO. IT IS NOT RIGHT FOR THIS GRANDMOTHER NOT TO GET ANY MONEY FOR HER COOKIES (point to woman in lower half) BECAUSE SHE MADE AS MANY COOKIES AS THE OTHER GRANDMOTHER. TELL ME WHY THIS GRANDMOTHER (point to bottom half) SHOULD HAVE AS MUCH MONEY AS THIS GRANDMOTHER (point to top half). (Child responds; reinforce)

The children in each class were divided into two groups according to colored dots that had been placed on their name tags the afternoons of the experiment. On the first day a female experimenter (undergraduate honors student) presented Lesson 1 (see Appendix E) to the children in the experimental group in each class while a male experimenter (also an honors

undergraduate) worked with the control group. On the second day when Lesson 2 (see Appendix E) was presented the male experimenter gave the lesson while the female experimenter conducted the control groups. Both experimental treatment conditions lasted an average of 20 minutes each. Lesson 2 was presented two days after Lesson 1 had been presented. Each lesson was presented first to the children in one class, then to the children in the other class. The children sat around the experimenter in a semicircle and watched the book the experimenter used to present the instruction. The pages of the lesson were designed so that the pictures for the children to look at appeared on the left-hand side of the page and the narrative for the experimenter appeared on the right-hand side of the page. A three-ring binder contained each lesson. Each page of the lesson was $8\frac{1}{2}$" x 11" and was enclosed in a transparent plastic sheet to prevent wear and tear and allow the children to touch the pictures without damaging them if they so desired.

The equity principles taught in these lessons were never discussed in their abstract form because young children appear incapable of generalizing verbally a general, more abstract principle from the specific instances used to teach the principle. However, young children tend to generalize according to more concrete factors such as function or rewards received. The intent of the lessons was not to teach the child to state the abstract principles of equity verbally but, rather, to help the child identify equitable distribution of rewards in previously unencountered instances.

Control condition.--While the children in the experimental condition were receiving the equity lessons the children in the control group sat in a semicircle around an honors undergraduate, who read them one or two favorite stories that had nothing to do with the principles of equity. The children were then asked questions about the content of the books they had heard and they in turn asked questions if they wished. The children in the control groups were located in separate rooms from the children in the experimental groups. Each control group met at the same time the experimental group for that class was meeting. There were two control sessions held two days apart. The control condition lasted an average of 20 minutes. It was designed to terminate at the same time the experimental group terminated. A male experimenter (honors undergraduate) conducted the control groups the first day and a female experimenter (also an honors undergraduate) the second day. The experimenters reversed their positions on the second day of the treatment, with the female acting as experimental instructor the first day and control teacher the second day, while this was reversed for the male experimenter.

Objective and behavioral posttest.--The posttest used in this study (Appendix F) consisted of the same two parts as the pretest used in the first study. The 10-item objective posttest was identical to the pretest with the exception that a few minor changes were made in the narrative. The posttest items were similar to but not identical with instructional instances.

The behavioral posttest again consisted of the "participant" and "supervisor" phases. However, the task was slightly altered and the reward was changed completely. During the "participant" phase (Phase 1) the child was allowed to complete two dot-to-dot pictures instead of one, a girl--with-umbrella and a clown. These were the same dot-to-dot patterns used for the pretest. A fictitious partner drew three dot-to-dot pictures instead of two as occurred in the pretest. After completing the two pictures before "time" was called, the child was shown the reward s/he would share with the "other" child. The reward consisted of six itsy bitsies similar to those used in the Streator and Cherkoff study (1976).

The itsy bitsies were each made of a 1-inch white pompom with two small craft "eyes" and a $\frac{1}{4}$-inch green felt triangle "nose" pasted on the pompom with a pink felt two-footed platform pasted on the bottom of the pompom. All itsy bitsies were identical in size, design, and color. Itsy bitsies were selected as the reward because they are universally appealing to preschool children, regardless of sex. As a matter of fact, they apparently are appealing to adults as well inasmuch as each adult working on the project requested at least one itsy bitsy for his/her own!

The children were faced with the dilemma of distributing an even and a larger number of prizes (6) than the number of pictures (5, with 2 for the child and 3 for the fictitious partner). The number of prizes (rewards) the child distributed to himself/herself, to the "other child, and any left over

were recorded on the posttest answer form (Appendix G). The child also indicated why he distributed the rewards the way s/he did.

The "supervisor" phase (Phase 2) of the behavior posttest required the child to distribute another set of six itsy bitsies to a fictitious child who had completed a clown dot-to-dot picture and to another fictitious child who had completed two dot-to-dot pictures, the clown and the girl-with-umbrella. During this phase the child was faced with the dilemma of distributing six itsy-bitsies to two "other" children who had completed only half the number of pictures (3, 1 and 2 respectively) as there were rewards. Again the child was asked to tell why he distributed the reward the way he did and his answer was recorded on the posttest answer sheet.

The children were tested individually in an experimental room adjacent to the laboratory where they attended classes. Posttesting began five days after the second treatment session and continued for four consecutive school days. The children were tested randomly by 5 undergraduate honors students who did not participate in nor observe the experimental or control treatment conditions. They were not acquainted with the study hypotheses nor did they know to which treatment group each child was assigned. Each testing session lasted an average of 15 minutes, including both the objective and behavioral parts of the posttest. Only those children were tested who had attended both treatment conditions the preceding week. The children enumerated in Table 8 are those who met these qualifications. These are the ones counted as the study sample.

Results

This experimental study was conducted to test the following hypothesis: preschool children exposed to instruction designed to teach the basic principles of equity and based on instructional design theory (Vance, 1976) will achieve higher scores on an objective and a behavioral posttest than preschool children not exposed to the instruction.

Objective Posttest Results

Table 10 shows the mean scores by treatment, class and sex on the 10-item objective posttest. Analysis of variance showed a significant treatment effect favoring the experimental group over the control group. Thus the study hypothesis was supported relative to the objective posttest. There were no significant class or sex differences.

TABLE 10 HERE

An important factor relative to the hypothesis is whether or not children in the two treatment groups achieved mastery on the objective posttest. Mastery is considered a score of 8 or more out of 10 items on the posttest. Figure 2 shows that the mean items correct for experimental males, for experimental females, and for the total experimental treatment fell well within the mastery region while corresponding mean scores for the control group were below the mastery region. Thus, the children in the experimental treatment not only achieved significantly better scores than the children in

the control group but they also achieved mastery on a criterion posttest given 5 to 8 days following the last treatment sessions, while the children in the control group did not.

FIGURE 2 HERE

Behavioral Posttest Results

Unlike the behavioral phases of the pretest, both the "participant" and the "supervisor" behavioral phases of the posttest required the child to distribute six prizes, itsy bitsies, rather than three prizes. In the "participant" phase the six prizes were distributed for five pieces of work (the 3 dot-to-dot pictures drawn by the fictitious child and the 2 dot-to-dot pictures drawn by the subject-child). Thus, there were more prizes than there were pieces of work. The children in this study distributed the six prizes in the "participant" phase in the following combinations:

Combination No.	Child With 3 Pictures	Subject With 2 Pictures	Left Over
1. (Equality)	3	3	0
2. (Equity)	3	2	1
3.	2	4	0
4.	2	3	1
5. (Equality)	2	2	2
6. (Equity)	2	1	3
7.	0	6	0
8.	1	5	0
9. (Equity)	4	2	0
10.	6	0	0

Three categories were used for counting frequency of response, as shown in Tables 11 and 12. A child's response was judged as "equity" if Combination No. 2, 6, or 9 was used. Combination No. 2 was the most frequent combination probably because it represents a one-to-one correspondence between the pieces of work and the prizes, with one left over. Combinations No. 6 and 9 are also considered equity but the reason for choosing these combinations is not apparent. Neither combination is a mathematically exact form of equity but is, nevertheless, considered equity for this study because the children in the study are too young to have any but the most rudimentary mathematics skills. A child's response was judged as "equality" if the combination was No. 1 or No. 5. Combination No. 1 was the most common type of equality demonstrated by the children and is probably the more mathematically simple of the two equality combinations. If a child's response was Combination No. 3, 4, 7, 8, or 10 it was counted in the "other" category.

TABLES 11 and 12 HERE

Because expected cell frequencies in the "equality" and "other" categories often fell below the required five it was not possible to do x^2 tests of significance of interaction or for many main effect comparisons in the "participant" phase of the behavioral test (see Table 11). Experimental and control groups were compared as were Class 1 and Class 2 (with "Equality"

and "Other" categories collapsed ir to one) revealing no significant differences. Visual inspection of Table 11 shows that the children in this study tended to distribute rewards equitably in the "participant" phase but that half of the children distributed rewards either equally or in some other distribution combination. This seems to reinforce the trend reported by Chertkoff and Streator (1976) when children are engaged in an activity where they, themselves, might receive some, most, or all of the rewards available.

When children engaged in the "supervisor" phase of the behavioral posttest self-interest was no longer a variable. The task was different as well. There were twice as many rewards to distribute (6) as prizes (3). The children in this study distributed prizes in the "supervisor" phase in the following combinations:

Combination No.	Child with 2 Pictures	Child with 1 Picture	Left Over
1. (Equity)	1	2	3
2.	1	5	0
3.	2	4	0
4. (Equality)	3	3	0
5. (Equity)	4	2	
6.	6	0	0
7.	0	6	0

The same three categories were used for the "supervisor" phase as for the "participant" phase: equity, equality, other. Combination Nos. 1 and 5 were counted as equity responses. Combination No. 1 was the most frequent equity response probably because it is mathematically easier for a

young child to distribute rewards on a one-to-one basis as in No. 1, rather than in the more difficult Combination No. 5, which is a departure from a one-to-one correspondence to the mathematically correct distribution of 6 rewards to achieve equity. Only Combination No. 4 was used by the children for equality distribution, probably the easiest form of equality in this instance (as opposed to a 2-2-2 combination). Combination Nos. 2, 3, 6, and 7 were classed in the "other" category.

Again most expected cell frequencies in the "equality" and "other" categories fell below the required five, so it was not possible to do any x^2 tests of significance on interactions or main effects comparisons. Visual inspection of Table 12 shows a pronounced tendency toward equitable distribution by the children in the study on the "supervisor" phase of the posttest and far fewer "equality" or "other" distributions of reward compared to responses on the "participant" phase (see Table 11).

The hypothesis that children who experienced equity instruction would perform more equitably on a posttest than children who did not experience such instruction was not supported on the "participant" nor the "supervisor" phases of the behavioral posttest.

Conclusions and Discussion

The first question asked in this research was at what age do children understand and apply the basic equity principles fundamental to free-enterprise economics? Study 1 provided evidence that children from late five on understand and apply the principles. Children of age three, four, and

early five apparently can do neither but their test scores indicate they are within the "teachable" range on their scores.

The second question asked if children within the "teachable" score range, when exposed to theory-based instruction related to basic equity principles, would be able to effectively and efficiently learn to understand such principles. Study 2 provided support for the hypothesis that such instruction not only is efficient (i.e., accomplished in a relatively short period of time) but is effective (i.e., the children learn what they are expected to learn). This study showed that children exposed to example-practice instructional strategies with a picture-book presentation mode and verbal prompts and feedback not only score higher on a posttest with a similar delivery mode except with previously unencountered instances, but also achieve mastery on the objective test.

The third question is similar to the second but asks if children exposed to such instruction will perform (apply) their skills effectively in real-life situations. Study 2 revealed no behavioral differences between children who had the instruction and those who had not. When self-interest is a factor (i.e., the subject-child can receive rewards) the trend for children in both experimental groups is just barely in the direction of equitable distribution of rewards. However, when self-interest is not a factor there is a pronounced trend toward equitable distribution of rewards. This tendency toward equitable distribution of rewards by such young children appears unique in the literature. A possible explanation for this trend may lie in the majority culture from which the children come that tends to be

explicit and specific in its value system and where psychological sanctions against offenders can be relatively severe.

It can be concluded that preschool children generally do not understand the principles of equity studied in this research but can be taught effectively and efficiently to understand these principles. Children in this study were as likely to distribute rewards equitably as non-equitably when self-interest was a factor, but the trend was a pronounced equitable distribution of rewards when self-interest was not a factor.

There is evidence that picture books, when designed and developed with theory-based instructional principles, are effective modes of instructional delivery for instruction relative to understanding the principles of equity. Further research should examine the effects of an enactive delivery system of instruction where the child acts out equity principles in simulated situations similar to those presented iconically and symbolically in the picture book presentation. The posttest would include applications of the principles in similar but not identical situations to those used in instruction. In addition, half of the experimental subjects should experience "participation" behavior tests while the other half experience "supervis r" behavior tests, half of which are conducted in the presence of an adult. This would indicate whether one type of test affects the other and whether or not the presence of an adult effects the child's behavior on the test.

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Table 1

Number of Subjects on Pretest

by Class, Grade, and Sex

Class	Preschool			Kindergarten			First Grade			Second Grade			TOTALS		
	M	F	Tot.	M	F	Tot.	M	F	Tot.	M	F	Tot.	M	F	Tot.
1	7	7	14												
2	12	9	21												
3				4	4	8	5	3	8	3	1	4			
4				2	6	8	8	6	14	6	3	9			
5				5	5	10	5	4	9	5	5	10			
TOTALS	19	16	35	11	15	26	18	13	31	14	9	23	62	53	115

Table 2

Mean Ages in Months of

Subjects on Pretest

by Class, Grade

and Sex

Class	Preschool			Kindergarten			First Grade			Second Grade			TOTALS		
	M	F	Tot.	M	F	Tot.	M	F	Tot.	M	F	Tot.	M	F	Tot.
1	61.9	57.7	59.8												
2	57.8	56.8	57.4												
3				73.5	72.5	73.0	82.8	83.0	82.9	92.0	98.0	93.5			
4				71.5	68.5	69.3	81.4	86.5	83.6	93.3	92.0	92.9			
5				72.4	76.8	74.6	84.6	87.8	86.0	97.0	95.8	96.4			
TOTALS	59.3	57.2	58.3	72.6	72.3	72.5	82.7	86.1	84.1	94.4	94.8	94.5	76.4	74.9	75.7

Table 3

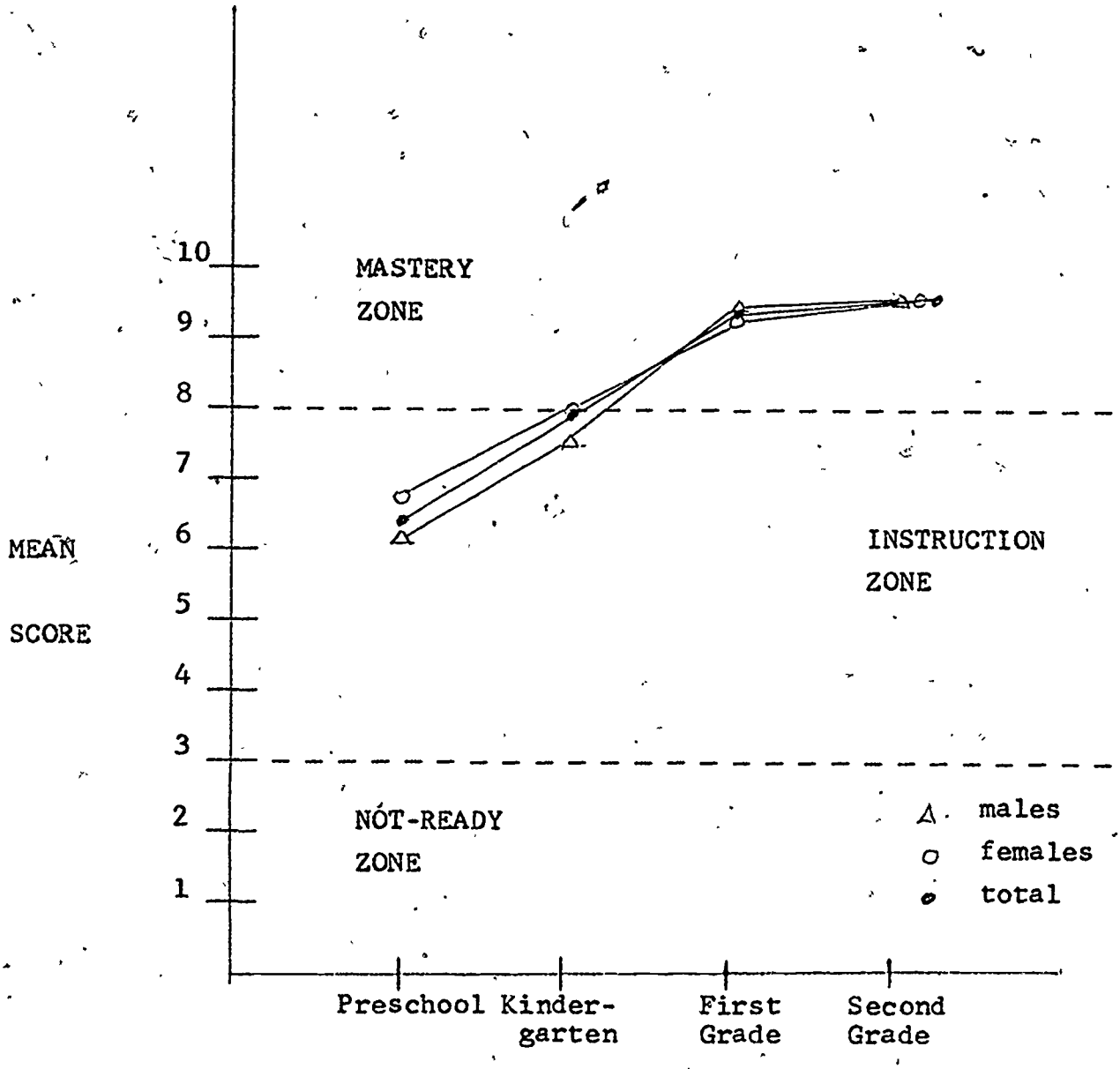
Mean Items Correct on

Objective Pretest by

Class, Grade and Sex

(10 possible)

Class	Preschool			Kindergarten			First Grade			Second Grade			TOTALS		
	M	F	Tot.	M	F	Tot.	M	F	Tot.	M	F	Tot.	M	F	Tot.
1	7.71	6.43	7.07												
2	5.08	6.89	5.86												
3				6.5	7.5	7.0	9.40	9.7	9.5	8.7	10	9.0			
4				5.5	6.83	6.5	9.63	8.83	9.29	9.83	8.33	9.33			
5				9.4	9.8	9.6	8.6	8.75	8.67	9.0	9.8	9.4			
TOTALS	6.1	6.7	6.3	7.6	8.0	7.9	9.3	9.0	9.2	9.3	9.3	9.3	8.0	8.0	8.0



Mean Items Correct on Objective Pretest by Class and Sex

Figure 1

Table 4

Mean "Easy" Items Correct

on Objective Pretest by

Class, Grade and Sex

(Items 4, 6, 7, 8, & 10)

Class	Preschool			Kindergarten			First Grade			Second Grade			TOTALS		
	M	F	Tot.	M	F	Tot.	M	F	Tot.	M	F	Tot.	M	F	Tot.
1	4.1	2.9	3.5												
2	3.3	3.0	3.2												
3				2.8	4.3	3.5	5.0	5.0	5.0	4.7	5.0	4.8			
4				2.5	3.7	3.4	5.0	4.3	4.7	5.0	5.0	5.0			
5				5.0	5.0	5.0	4.4	4.0	4.2	4.4	5.0	4.7			
TOTALS	3.6	2.9	3.3	3.7	4.3	4.0	4.8	4.4	4.7	4.7	5.0	4.8	4.2	4.0	4.1

Table 5

Mean "Medium" Items Correct

on Objective Pretest by

Class, Grade and Sex

(Items 1, 2, 3, 5 & 9)

Class	Preschool			Kindergarten			First Grade			Second Grade			TOTALS		
	M	F	Tot.	M	F	Tot.	M	F	Tot.	M	F	Tot.	M	F	Tot.
1	3.6	3.6	3.6												
2	3.4	3.9	3.6												
3				3.8	3.3	3.5	4.4	4.7	4.5	4.0	5.0	4.3			
4				3.0	3.2	3.1	4.5	4.5	4.5	4.8	3.3	4.3			
5				4.4	4.8	4.6	4.2	4.8	4.4	4.6	4.8	4.7			
TOTALS	3.5	3.8	3.6	3.9	3.7	3.8	4.4	4.6	4.5	4.6	4.3	4.5	4.1	4.1	4.1

Table 6

Frequency of Type of Reward Distribution in the "Participant" Phase of the Behavioral Pretest as a Function of Class, Grade, and Sex

	Reward Distribution		
	Equity	Equal	Other
Class:			
Class 1	5	1	8
Class 2	14	0	7
Class 3	19	0	1
Class 4	23	4	4
Class 5	26	0	3
Grade:			
Preschool	19	1	15
Kindergarten	21	3	2
First	27	1	3
Second	20	0	3
Sex:			
Male	47	2	13
Female	40	3	10

Table 7

Frequency of Type of Reward Distribution in the Supervisor Phase of the Behavioral Pretest as a Function of Class, Grade, and Sex

	Reward Distribution		
	Equity	Equal	Other
Class:			
Class 1	8	0	6
Class 2	12	0	9
Class 3	19	0	1
Class 4	26	2	3
Class 5	27	0	2
Grade:			
Preschool	20	0	15
Kindergarten	21	1	4
First	29	1	1
Second	22	0	1
Sex:			
Male	49	1	12
Female	43	1	9

Table 8

Number of Children in Experimental Study by Treatment, Class and Sex

Treatment	Class 1			Class 2			TOTALS		
	M.	F	Tot.	M	F	Tot.	M	F	Tot.
Exp'l	3	5	8	6	2	8	9	7	16
Control	2	5	7	4	4	8	6	9	15
TOTALS	5	10	15	10	6	16	15	16	31

Table 9

Mean Ages of Children in Experimental Study by Treatment, Class and Sex

Treatment	Class 1			Class 2			TOTALS		
	M	F	Tot.	M	F	Tot.	M	F	Tot.
Exp'l.	49.7	46.4	47.6	53.0	44.0	50.8	51.9	45.7	49.2
Control	46.0	50.4	49.1	53.3	54.0	53.6	50.8	52.0	51.5
TOTALS	48.2	48.4	48.3	53.1	50.7	52.2	51.5	49.3	50.3

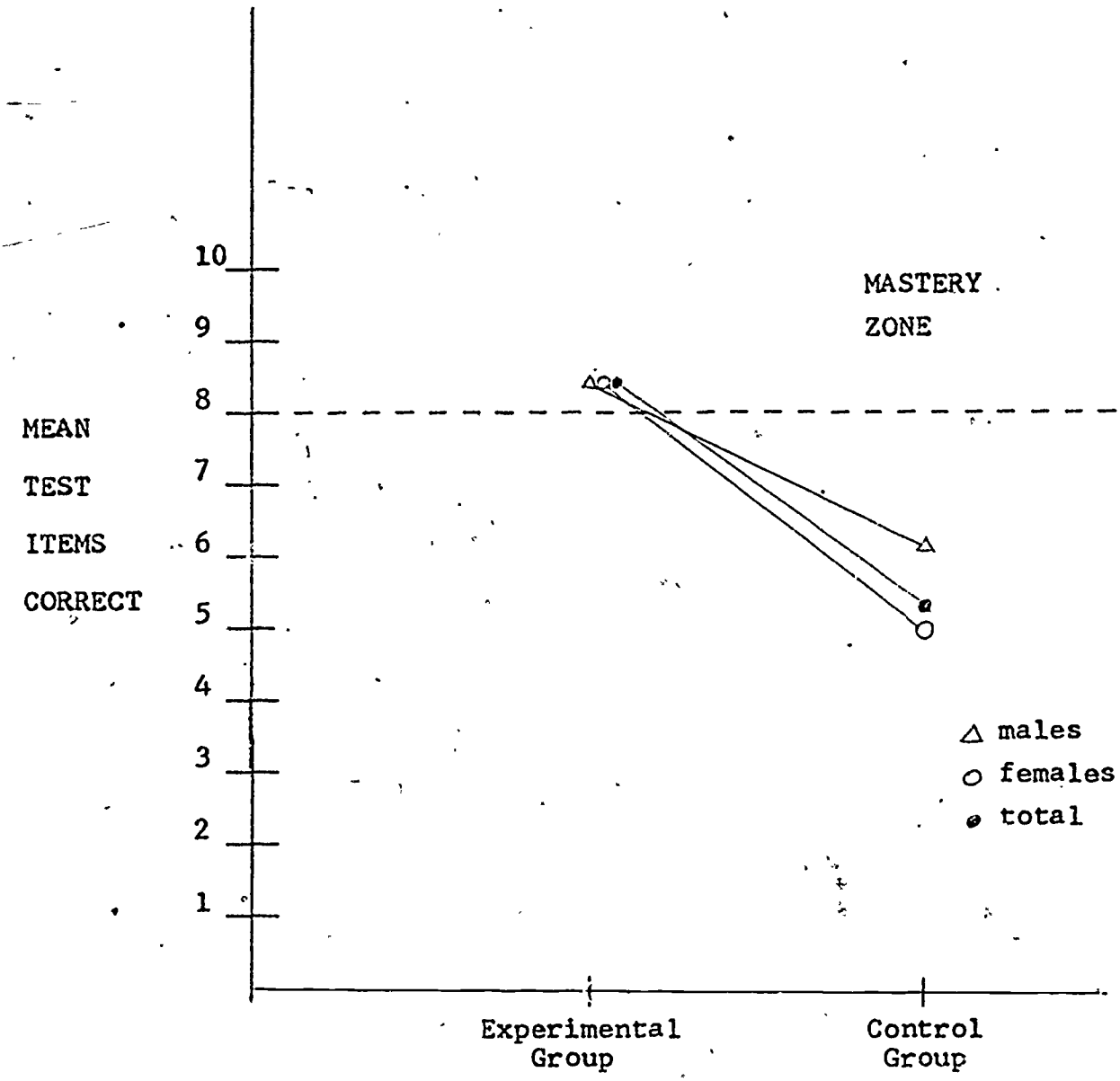
Table 10

Mean Scores on Objective

Posttest by Treatment,

Class and Sex

Treatment	Class 1			Class 2			TOTALS		
	M	F	Tot.	M	F	Tot.	M	F	Tot.
Exp'l	8.33	9.20	8.88	8.50	6.50	8.00	8.44	8.43	8.44
Control	5.50	5.80	5.71	6.25	4.50	5.38	6.00	4.70	5.19
TOTALS	7.60	5.17	6.69	7.20	7.50	7.40	7.45	6.63	7.03



Mean Items Correct on Objective
Posttest by Treatment and Sex

Figure 2

Table 11

Frequency of Type of Reward Distribution in the "Participant" Phase of the Behavioral Posttest as a Function of Treatment, Class and Sex

	Reward Distribution		
	Equity	Equality	Other
Treatment:			
Experimental	8	4	4
Control	8	6	1
Class:			
Class 1	10	2	3
Class 2	6	8	2
Sex:			
Male	7	5	3
Female	9	5	2

Table 12

Frequency of Type of Reward Distribution in the "Supervisor" Phase of the Behavioral Posttest as a Function of Treatment, Class and Sex

	Reward Distribution		
	Equity	Equality	Other
Treatment:			
Experimental	12	1	3
Control	11	1	3
Class:			
Class 1	13	0	2
Class 2	10	2	4
Sex:			
Male	8	2	5
Female	15	0	1

APPENDICES

A THROUGH G

Pretest

INSTRUCTIONS FOR EXAMINER:

Invite the child to accompany you to the experimental room to "play a game." Seat the child where it will be the easiest for you to turn the pages and point to items on each picture and also see your own book and keep score and write comments on the child's record form. Tell the child you want him or her to look at some pictures and to help you decide the right thing for each picture. If the child is uncomfortable, engage in informal conversation to help the child relax. If the child asks if this is a test, say that it is a game, that you need to know what the child thinks about some things that happen to children and to grown-ups. If the child asks during the test how he/she is doing, simply say something like, "You are doing good thinking" or "You have some interesting ideas," etc. Never tell the child whether or not he or she is correct on any item.

There are two parts to this pretest. The first part is the 10-item objective test. The second part is a two-phase behavioral test. The instructions for the behavioral test follow the narration for the objective test. Be sure to use the record forms assigned to the children. Write their "why" answers in as short a sentence each as possible.

NARRATION FOR OBJECTIVE TEST

Materials: Trainer's manual (for use by examiner)
Child booklet (with pictures)
Record forms for each child
Pen or pencil

Turn to Picture 1 in the child's booklet.

Picture 1
Say THESE GIRLS (point) ARE LEARNING TO MAKE THEIR BEDS. EVERY TIME EACH GIRL MAKES HER BED HER MOTHER GIVES HER A TOOTSIE ROLL. EACH GIRL MADE HER BED AS MANY TIMES AS THE OTHER ONE DID.
WHAT DOES EACH GIRL GET WHEN SHE MAKES HER BED? ← WHAT ARE THE GIRLS LEARNING TO DO?
DID ONE GIRL MAKE HER BED MORE THAN THE OTHER?
(Child responds--correct if necessary)

Picture 1A
Say THE OLDER SISTER (point to girl in blue) MADE HER BED AS MANY TIMES AS THE YOUNGER SISTER (point to girl in pink). THE OLDER SISTER (point) HAS AS MANY TOOTSIE ROLLS (point) AS THE YOUNGER SISTER (point to tootsie rolls of girl in pink).
IS THIS RIGHT FOR BOTH SISTERS TO HAVE THE SAME NUMBER OF TOOTSIE ROLLS?
TELL ME WHY YOU THINK SO.
(Child responds--do not tell child whether correct or not)

Picture 2
Say THIS WOMAN (point to woman in pink) MADE THREE APRONS TO SELL (count aprons as you point to them). THIS WOMAN (point to woman in blue) MADE TWO APRONS TO SELL (count aprons as you point to them). THIS WOMAN IN PINK SOLD ALL HER APRONS (point to woman and aprons). THIS WOMAN IN BLUE SOLD ALL HER APRONS (point to woman and aprons).
WHAT DID THE WOMEN MAKE TO SELL?
WHO SOLD MORE APRONS?
(Child responds--correct if necessary)

Picture 2A
Say THE WOMAN IN PINK SOLD ALL THREE OF HER APRONS. SHE HAS TWO DOLLARS IN HER HAND (point). THIS WOMAN IN BLUE SOLD HER TWO APRONS. SHE HAS THREE DOLLARS IN HER HANDS (point). THE WOMAN IN BLUE HAS MORE MONEY THAN THE WOMAN IN PINK (point).
IS IT RIGHT FOR THE WOMAN IN BLUE TO HAVE MORE MONEY THAN THE WOMAN IN PINK (point)?
WHY DO YOU THINK SO?
(Child responds--do not tell child whether correct or not)

Picture 3
Say THESE CHILDREN ARE IN THE FIFTH GRADE (point to the four children). THEY ARE SUPPOSED TO CLEAN UP THE GARBAGE ON THE SCHOOL GROUNDS DURING RECESS FOR ONE WEEK. IF THEY DO THEIR WORK THEIR TEACHER (point) WILL GIVE EACH OF THEM A FAVORITE BOOK TO KEEP. EACH CHILD CLEANED UP THE GARBAGE DURING RECESS FOR ONE WEEK.
WHAT WERE THE CHILDREN SUPPOSED TO DO?
WHAT WERE THEY GOING TO GET FOR A REWARD IF THEY DID WHAT THEY WERE SUPPOSED TO DO?

DID THEY ALL DO WHAT THEY WERE SUPPOSED TO DO?
(Child responds--correct if necessary)

Picture 3A
Say EACH OF THESE CHILDREN (point) CLEANED UP GARBAGE ON THE SCHOOL GROUNDS DURING RECESS FOR ONE WEEK. ONLY THESE TWO CHILDREN RECEIVED BOOKS FROM THEIR TEACHER (Point).
IS IT RIGHT FOR THESE TWO CHILDREN (point to 2 children with books) TO GET BOOKS BUT NOT THESE TWO CHILDREN (point to 2 children without books)?
WHY DO YOU THINK SO?
(Child responds--do not tell child whether correct or not)

Picture 4
Say THESE CHILDREN ARE SUPPOSED TO BE GETTING READY FOR BED (point). THEIR FATHER (point) WILL READ THEM A STORY IF THEY ARE READY FOR BED BY 8 O'CLOCK. ANY CHILD WHO IS NOT READY FOR BED BY 8 O'CLOCK WON'T BE ABLE TO HEAR A STORY. THESE TWO CHILDREN (point to girl in pink and boy in green) GET READY FOR BED BY 8 O'CLOCK. THIS CHILD (Point to boy in chair) DAWDLED AND READ A BOOK SO HE WASN'T READY FOR BED BY 8 O'CLOCK.
WHAT WERE THE CHILDREN SUPPOSED TO DO?
WHAT WOULD HAPPEN IF THEY WERE READY FOR BED AT 8 O'CLOCK?
WHAT WOULD HAPPEN IF THEY WERE NOT READY FOR BED AT 8 O'CLOCK?
WHO WAS READY FOR BED BY 8 O'CLOCK? WHO WAS NOT READY?
(Child responds--correct if necessary)

Picture 4A
Say THESE TWO CHILDREN WERE READY FOR BED BY 8 O'CLOCK (point to children in father's lap). THEIR FATHER IS READING THEM A STORY. THIS CHILD (point to boy in blue) IS NOT READY FOR BED. HE CANNOT HEAR A STORY.
IS IT RIGHT FOR THESE TWO CHILDREN (point to children in their father's lap) TO HEAR A STORY BUT FOR THIS CHILD (point to child in blue) NOT TO HEAR A STORY?
WHY DO YOU THINK SO?
(Child responds--do not tell child whether correct or not)

Picture 5
Say THIS IS THE OLDER BROTHER (point to boy on left) AND THIS IS THE YOUNGER BROTHER (point to boy on right). THEY ARE WORKING IN THEIR FATHER'S GARDEN. THEY GET ONE DOLLAR FOR EVERY HOUR THEY WORK IN THE GARDEN. THE YOUNGER BROTHER (point to boy on right) WORKS LONGER THAN THE OLDER BROTHER (point to boy on left).
WHAT ARE THE BOYS DOING?
WHAT WILL THEY GET FOR EVERY HOUR THEY WORK IN THE GARDEN?
WHICH BOY WORKED LONGER THAN THE OTHER ONE?
(Child responds--correct if necessary)

Picture 5A
Say THE YOUNGER BROTHER (point to boy on right) WORKED LONGER THAN HIS OLDER BROTHER (point to boy on left). THE YOUNGER BROTHER HAS MORE MONEY (point to money in hands of boy on right) THAN HIS OLDER BROTHER (point to money in hands of boy on left).

IS IT RIGHT FOR THE YOUNGER BROTHER (point to boy on right) TO HAVE MORE MONEY THAN THE OLDER BROTHER (point to boy on the left)?
WHY DO YOU THINK SO?
(Child responds--do not tell child whether correct or not)

Picture 6
Say ANN'S JOB IS TO SET THE TABLE (point to girl). HER BROTHER, BOB'S, JOB (point to boy) IS TO CLEAR THE TABLE. IF THEY DO THEIR JOB THEY GET TO WATCH TV AFTER DINNER. ANN DID HER JOB OF SETTING THE TABLE (point). BOB DIDN'T DO HIS JOB OF CLEARING THE TABLE.
WHAT ARE THESE CHILDREN SUPPOSED TO DO?
WHAT WILL THEY GET IF THEY DO IT?
WHICH CHILD DID THE JOB? WHICH CHILD DIDN'T?
(Child responds--correct if necessary)

Picture 6A
Say THIS IS ANN (point to girl). SHE SET THE TABLE BEFORE DINNER. NOW SHE IS WATCHING TV AFTER DINNER. THIS IS BOB (point to boy). HE DID NOT CLEAR THE TABLE AFTER DINNER. HIS MOTHER WILL NOT LET HIM WATCH TV.
IS IT RIGHT FOR ANN TO WATCH TV (point to girl) BUT FOR BOB NOT TO WATCH TV (point to boy)?
WHY DO YOU THINK SO?
(Child responds--do not tell child whether correct or not)

Picture 7
Say MR. BROWN (point to man in brown) AND MR. GREEN (point to man in green) WORK IN THE SAME OFFICE. THEIR BOSS TOLD THEM IF THEY WERE ON TIME FOR WORK TODAY THEY COULD LEAVE WORK EARLY TO PLAY GOLF. MR. BROWN (point) WAS ON TIME TO WORK. MR. GREEN (point) WAS NOT.
WHAT WERE THESE TWO MEN SUPPOSED TO DO (point to the men)?
WHAT WOULD HAPPEN IF THEY WERE ON TIME TO WORK?
POINT TO THE MAN WHO WAS ON TIME FOR WORK.
POINT TO THE MAN WHO WAS NOT ON TIME FOR WORK.
(Child responds--correct if necessary)

Picture 7A
Say MR. BROWN WAS ON TIME FOR WORK THIS MORNING (point to man in brown). HE IS GETTING OFF WORK EARLY TO PLAY GOLF (point to golf club in his hand). MR. GREEN (point to man in green) WAS LATE FOR WORK THIS MORNING. HE IS ALSO GETTING OFF WORK EARLY TO PLAY GOLF (point to golf club in his hand).
IS IT RIGHT FOR BOTH MR. BROWN AND MR. GREEN TO GET OFF WORK EARLY TO PLAY GOLF?
WHY DO YOU THINK SO?
(Child responds--do not tell child whether correct or not)

Picture 8

Say ALLEN AND FRED ARE FRIENDS WHO ARE SUPPOSED TO BE PICKING APPLES TO EARN SOME MONEY. THEY GET ONE DOLLAR FOR EVERY BASKET OF APPLES THEY PICK. ALLEN WORKS HARD AND PICKS FOUR BASKETS OF APPLES (point to boy picking apples). FRED DOESN'T PICK APPLES. INSTEAD, HE PLAYS WITH HIS DOG UNDERNEATH THE APPLE TREES (point to boy playing with dog).

WHAT ARE THE BOYS SUPPOSED TO BE DOING?
WHAT WILL THEY GET FOR EVERY BASKET OF APPLES THEY PICK (point to one of the full baskets of apples).
WHICH ONE OF THE BOYS DID WHAT HE WAS SUPPOSED TO DO?
WHICH ONE OF THE BOYS DID NOT DO WHAT HE WAS SUPPOSED TO DO?
(Child responds--correct if necessary)

Picture 8A

Say ALLEN PICKED FOUR BASKETS OF APPLES. HE HAS FOUR DOLLARS IN HIS HANDS (point to boy with money in his hands). FRED DID NOT PICK ANY APPLES. HE DOES NOT HAVE ANY MONEY IN HIS HANDS (Point to boy with no money in his hands).

IS THIS RIGHT FOR ALLEN (point to boy with money) BUT NOT FRED (point to boy with no money) TO GET SOME MONEY?
WHY DO YOU THINK SO?
(Child responds--do not tell child whether correct or not)

Picture 9

Say THESE THREE CHILDREN IN THE SECOND GRADE MADE PICTURES TO SELL AT THE SCHOOL FAIR. THIS GIRL MADE 3 PICTURES TO SELL (point to girl with 3 pictures). THIS BOY MADE 2 PICTURES TO SELL (point to boy). THIS GIRL MADE ONLY 1 PICTURE TO SELL (point to girl with 1 picture). THEY SOLD THEIR PICTURES FOR A QUARTER EACH.

WHAT DID THESE CHILDREN DO?
HOW MUCH DID THEY SELL THEIR PICTURES FOR?
WHICH CHILD SOLD THE MOST PICTURES?
WHICH CHILD SOLD ONLY ONE PICTURE?
WHICH CHILD SOLD TWO PICTURES?
(Child responds--correct if necessary)

Picture 9A

Say THIS GIRL SOLD ALL 3 OF HER PICTURES (point to girl in the middle). SHE RECEIVED 2 QUARTERS. THIS BOY SOLD HIS TWO PICTURES (point to boy). HE RECEIVED TWO QUARTERS. THIS GIRL SOLD THE ONE PICTURE SHE MADE (point to girl on left). SHE RECEIVED 2 QUARTERS.

IS IT RIGHT FOR EACH OF THESE CHILDREN TO GET TWO QUARTERS FOR SELLING THEIR PICTURES?
WHY DO YOU THINK SO?
(Child responds--do not tell child whether correct or not)

Picture 10

Say THESE THREE CHILDREN ARE BROTHERS AND SISTERS. EACH CHILD WHO STAYS IN THE YARD LIKE MOMMY SAID WILL GET AN ICE CREAM CONE FOR A TREAT. THESE TWO CHILDREN STAYED IN THE YARD (point to children in the yard). THIS CHILD PLAYED OUTSIDE THE YEAR (point to child on tricycle outside the fence).

WHAT ARE THESE CHILDREN SUPPOSED TO DO?
WHAT WILL THEY GET IF THEY STAY IN THE YARD?
WHO STAYED IN THE YARD?
WHO DID NOT STAY IN THE YARD?
(Child responds--correct if necessary)

Picture 10A

Say THESE CHILDREN (point to children inside the fence) STAYED IN THE YARD. THEY ARE EATING ICE CREAM CONES. THIS CHILD WENT OUTSIDE THE YARD (point to child on tricycle outside the fence). HE DOES NOT HAVE AN ICE CREAM CONE.

IS IT RIGHT FOR THESE CHILDREN (point to children eating ice cream cones) TO HAVE ICE CREAM CONES BUT NOT THIS CHILD (point to child outside the fence)?
WHY DO YOU THINK SO?
(Child responds--do not tell child whether correct or not)

NARRATION FOR BEHAVIORAL TEST

Materials:

Set of 7 example dot-to-dot pictures
Balloons for prizes
Marbles for prizes
Clown dot-to-dot pictures for children to use
Crayon for child

Phase 1

Say NOW WE'RE GOING TO PLAY A LITTLE GAME WHERE YOU FIND OUT IF YOU CAN DRAW SOMETHING FASTER AND DO MORE PICTURES THAN ANOTHER CHILD I'LL TELL YOU ABOUT LATER.

Show child an uncompleted dot-to-dot clown picture.

CAN YOU SEE THE NUMBERS ON THIS PICTURE? I WANT YOU TO DRAW A LINE FROM ONE NUMBER TO ANOTHER, STARTING WITH ONE AND GOING TO TWO, THEN ON TO THREE, THEN FOUR, AND SO ON UNTIL THE PICTURE IS FINISHED.

Use your finger to go from one number to another as you name the first four numbers.

I'LL HELP YOU FIND THE NUMBERS IF YOU LIKE. HERE IS A CRAYON SO YOU CAN DRAW THE LINES.

Hand child a crayon.

WAIT UNTIL I TELL YOU TO START. GO AS FAST AS YOU CAN BECAUSE I WANT TO SEE HOW MANY PICTURES YOU CAN DRAW BEFORE I CALL TIME. WHEN YOU ARE FINISHED YOUR PICTURE WILL LOOK SOMETHING LIKE THIS ONE.

Show child the completed version of the clown dot-to-dot picture (Picture A).

IF THERE IS STILL TIME LEFT YOU CAN ALSO DO THIS PICTURE.

Show an uncompleted umbrella dot-to-dot picture (Picture B).

ARE YOU READY? BEGIN.

The child draws from numeral to numeral, with your help if necessary, as fast as he/she can without rushing. Give help, if necessary, and also verbal encouragement as needed.

Say TIME as soon as the child finishes the clown picture.

Write the child's name on the picture.

NOW LET'S KEEP YOUR PICTURE RIGHT HERE IN FRONT OF YOU.

Put child's picture directly in front of him/her. Put Pictures 1 and 2 directly above the child's completed clown picture.

HERE ARE THE PICTURES ANOTHER CHILD YOUR AGE MADE IN THE SAME AMOUNT OF TIME YOU MADE YOURS. I HAVE SOME PRIZES HERE.

If the child is a boy, put three marbles in your hand. If the child is a girl, put three balloons of the same color in your hand.

I NEED YOU TO HELP ME DECIDE HOW TO DIVIDE THESE PRIZES.

Hand the prizes to the child.

YOU DECIDE HOW MUCH PRIZE THIS OTHER CHILD SHOULD HAVE. DECIDE HOW MUCH PRIZE YOU SHOULD HAVE. THEN GIVE ME HOW MUCH PRIZE YOU THINK THIS OTHER CHILD SHOULD HAVE FOR THE PICTURES.

Child decides and hands you the prize for the "other child."

TELL ME WHY THE PRIZE SHOULD BE DIVIDED THIS WAY.

Record on record form how many balloons or marbles the child gave himself/herself and the "other" and the reason why.

Tell child to put his/her prize and completed clown dot-to-dot picture aside until he/she returns to the classroom. Then go on to the next phase of the behavioral test.

Phase 2

Say NOW I NEED YOUR HELP DECIDING HOW TO DIVIDE THESE SAME KINDS OF PRIZES BETWEEN TWO OTHER CHILDREN WHO DID THE SAME KIND OF THING YOU DID. HERE IS A PICTURE A CHILD YOUR AGE DREW.

Put Picture 3 directly in front of the child.

HERE ARE TWO MORE PICTURES A SECOND CHILD THE SAME AGE DREW IN THE SAME AMOUNT OF TIME.

Put Pictures 4 and 5 above Picture 3.

HERE ARE THE PRIZES.

Hold up the same kind of prize you used before--3 balloons or 3 marbles.

PUT ON THIS PICTURE (Point to Picture 3) HOW MUCH PRIZE THIS CHILD SHOULD GET FOR DRAWING ONE PICTURE.

Child places prize on Picture 3.

NOW PUT ON THESE TWO PICTURES HOW MUCH PRIZE THIS CHILD SHOULD GET FOR DRAWING TWO PICTURES. (Point to Pictures 4 and 5)

Child places prize on Pictures 4 and 5. Record how many marbles or balloons were given to child with one picture and to child with two pictures.

TELL ME WHY THE PRIZE SHOULD BE DIVIDED THIS WAY.

Record the child's answer on the record form. Thank the child for being such a good game player. Remind the child that he/she can keep the prize he/she gave himself/herself for drawing the first picture. He/she can also keep the picture he/she drew. Suggest to the child that he/she put the prize and picture in his/her locker until it is time to go home so it won't get lost. Take the child back to the classroom.

Child's Name_____Teacher_____

Child's age_____Date of test_____

Picture 1 Yes____No____
Why:

Picture 2 Yes____No____
Why:

Picture 3 Yes____No____
Why:

Picture 4 Yes____No____
Why:

Picture 5 Yes____No____
Why:

Picture 6 Yes____No____
Why:

Picture 7 Yes____No____
Why:

Picture 8 Yes____No____
Why:

Picture 9 Yes____No____
Why:

Picture 10 Yes____No____
Why:

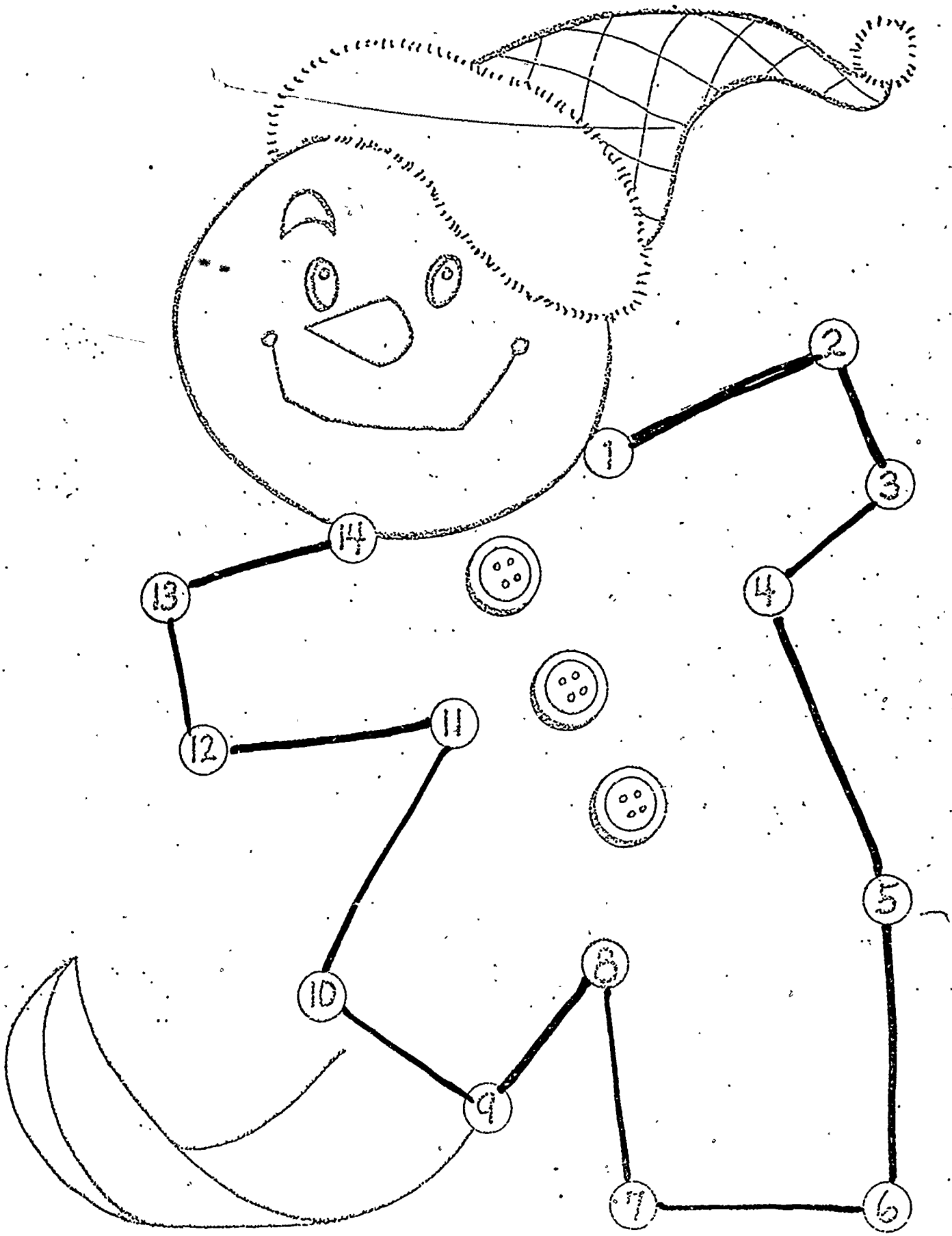
BEHAVIOR

Phase 1

Number given to himself/herself____
Number given to "other" child____
Why:

Phase 2

Number to child with 1 picture____
Number to child with 2 pictures____
Why: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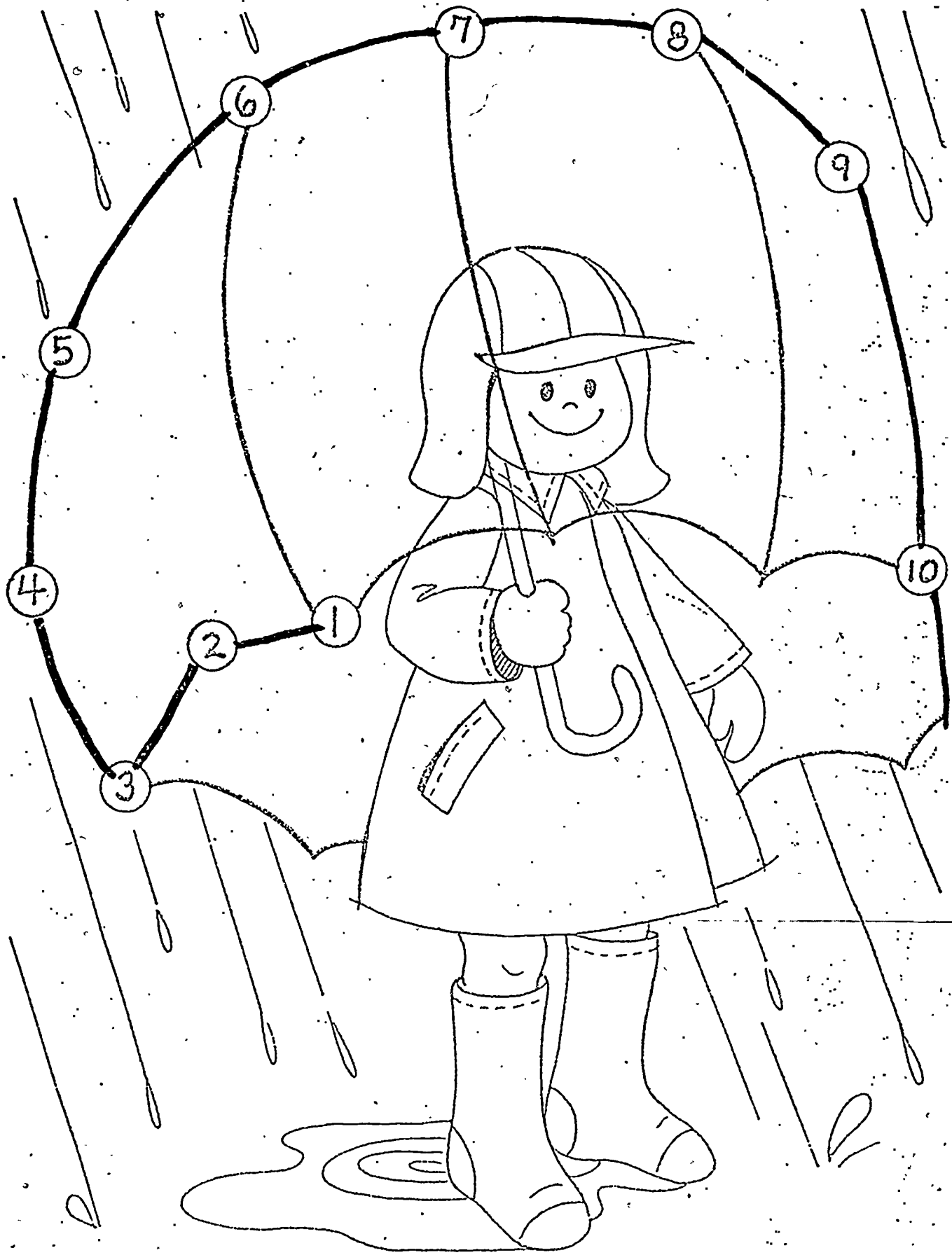
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APPENDIX E

Lesson 2

FAIR DISTRIBUTION OF REWARDS

Instructional Program on Equity

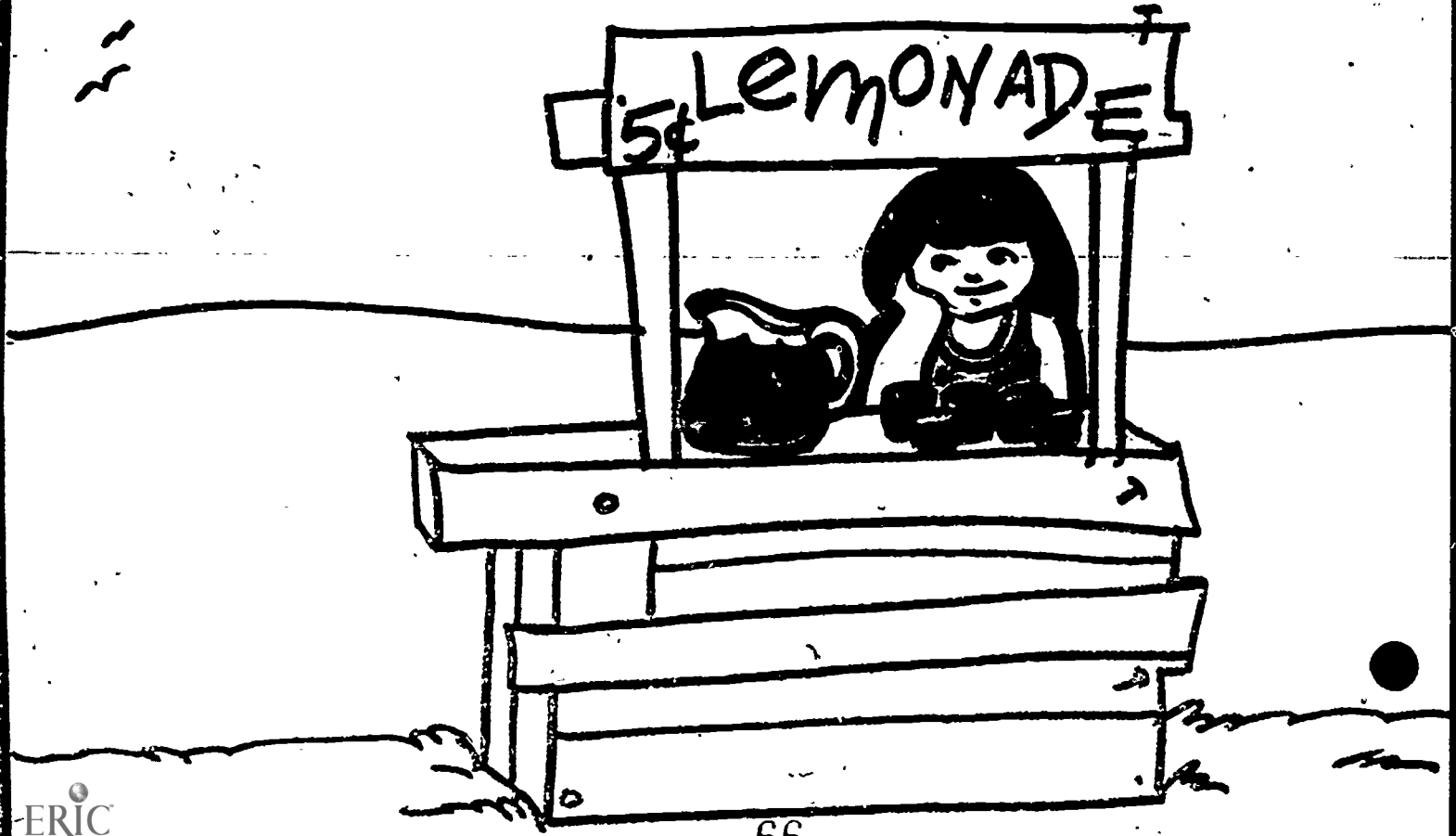
for Prekindergarten Children

Script: Barbara Vance
Illustrations: Lori Anderson

for

Communications Research Center
College of Fine Arts & Communications
Brigham Young University
June 1977


Lemonade 5¢


5¢ LEMONADE

EXAMPLES

Introduction

HERE ARE SOME NEW PICTURES I WANT TO TELL YOU ABOUT. I WANT YOU TO LOOK AT THE PICTURES AND LISTEN VERY CAREFULLY TO WHAT I SAY BECAUSE I'M GOING TO ASK YOU SOME QUESTIONS ABOUT EACH PICTURE. ARE YOU READY FOR THE FIRST PICTURE? HERE WE GO.

Show Picture No. 7

THIS GIRL (point to girl in top half) IS SELLING KOOL-AID AT HER STAND TO THE CHILDREN IN THE NEIGHBORHOOD. SHE IS SELLING EACH CUP FOR FIVE PENNIES. THIS GIRL (point to girl in lower half) IS ALSO SELLING KOOL-AID AT HER STAND TO THE CHILDREN IN HER NEIGHBORHOOD. SHE ALSO SELLS EACH CUP FOR FIVE PENNIES. THIS GIRL (point to girl in top half) WORKED VERY HARD AND SOLD LOTS OF KOOL-AID. THIS GIRL (point to girl in bottom half) DIDN'T WORK VERY HARD AND SO SHE DIDN'T SELL VERY MUCH KOOL-AID.

(Point to a child) WHAT ARE THESE GIRLS SELLING (point to both girls)?

(Child responds)

If correct: YES, THEY ARE SELLING KOOL-AID TO THE CHILDREN IN THE NEIGHBORHOOD.
If incorrect: NO, THEY ARE SELLING KOOL-AID TO THE CHILDREN IN THE NEIGHBORHOOD. WHAT ARE THEY DOING? (Child responds; reinforce)

(Point to another child) WHAT DO THEY GET FOR EVERY CUP OF KOOL-AID THEY SELL?

(Child responds)

If correct: YES. THEY GET FIVE PENNIES FOR EVERY CUP OF PUNCH THEY SELL.
If incorrect: NO. THEY GET FIVE PENNIES FOR EVERY CUP OF PUNCH THEY SELL. NOW TELL ME HOW MUCH THEY GET FOR EVERY CUP OF PUNCH THEY SELL. (Child responds; reinforce)

(Point to another child) ONE GIRL WORKED VERY HARD AND SOLD LOTS OF KOOL-AID. POINT TO THE GIRL WHO SOLD LOTS OF KOOL-AID.

(Child responds)

If correct: YES. THIS GIRL (point to girl in top half) WORKED VERY HARD AND SOLD LOTS OF KOOL-AID. THIS GIRL (lower half) DIDN'T WORK VERY HARD SO SHE DIDN'T SELL VERY MUCH KOOL-AID.
If incorrect: NO. THIS GIRL (point to girl in top half) WORKED VERY HARD AND SOLD LOTS OF KOOL-AID. THIS GIRL (lower half) DIDN'T WORK VERY HARD SO SHE DIDN'T SELL VERY MUCH KOOL-AID. NOW SHOW ME WHICH GIRL SOLD LOTS OF KOOL-AID. (Child responds; reinforce)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Show Picture No. 7A

(Point to girl in top half of picture) THIS GIRL WORKED VERY HARD AND SOLD LOTS OF KOOL-AID. SHE HAS LOTS OF MONEY FOR HER HARD WORK. THIS GIRL (point to girl in lower half of picture) DID NOT WORK VERY HARD SO SHE DIDN'T SELL VERY MUCH KOOL-AID. SHE DOESN'T HAVE VERY MUCH MONEY. SHE SHOULDN'T HAVE VERY MUCH MONEY BECAUSE SHE DIDN'T WORK VERY HARD AND DIDN'T SELL VERY MUCH KOOL-AID.

(Point to a child) TELL ME WHY THIS GIRL (point to top half) HAS LOTS OF MONEY AND THIS GIRL (point to lower half) HAS ONLY A LITTLE BIT OF MONEY.

(Child responds)

If correct: YES. THIS GIRL (point to top half) WORKED VERY HARD SO SHE SHOULD HAVE LOTS OF MONEY. THIS GIRL (point to lower half) DID NOT WORK VERY HARD SO SHE SHOULD NOT HAVE VERY MUCH MONEY.

If incorrect: NO. THIS GIRL (point to top half) WORKED VERY HARD SO SHE SHOULD HAVE LOTS OF MONEY. THIS GIRL (point to lower half) DID NOT WORK VERY HARD SO SHE SHOULD NOT HAVE VERY MUCH MONEY. NOW TELL ME WHY THIS GIRL (point to top half) HAS LOTS OF MONEY AND THIS GIRL (point to lower half) HAS ONLY A LITTLE BIT OF MONEY. (Child responds; reinforce)


Lemonade 5¢
5¢ LEMONADE

Show Picture No. 7B

NOW LET'S PRETEND THAT THIS GIRL (point to top half) WHO WORKED VERY HARD AND SOLD LOTS OF KOOL-AID GOT LOTS OF MONEY, BUT THIS GIRL (point to bottom half) WHO DIDN'T WORK VERY HARD AND DIDN'T SELL VERY MUCH KOOL-AID DIDN'T GET ANY MONEY AT ALL. THAT IS NOT RIGHT. THIS GIRL (point to bottom half) SHOULD HAVE A LITTLE BIT OF MONEY BECAUSE SHE WORKED A LITTLE BIT AND SOLD A FEW CUPS OF KOOL-AID.

(Point to a child) TELL ME WHY THIS GIRL (point to lower half) SHOULD HAVE A LITTLE BIT OF MONEY.

(Child responds)

If correct: YES, SHE SHOULD HAVE A LITTLE BIT OF MONEY BECAUSE SHE WORKED A LITTLE BIT AND SOLD A FEW CUPS OF KOOL-AID.

If incorrect: NO. THIS GIRL (point to lower half) SHOULD HAVE A LITTLE BIT OF MONEY BECAUSE SHE WORKED A LITTLE BIT AND SOLD A FEW CUPS OF KOOL-AID. NOW TELL ME WHY SHE SHOULD HAVE A LITTLE BIT OF MONEY. (Child responds; reinforce)

Show Picture No. 8

THESE MEN (point to two farmers) ARE FARMERS WHO ARE BRINGING THEIR EGGS TO MARKET TO SELL TO THE MAN WHO OWNS THE MARKET. BOTH FARMERS BRING EXACTLY THE SAME NUMBER OF EGGS TO SELL (point to egg crates). SO THEY BOTH GET THE SAME AMOUNT OF MONEY FOR THEIR EGGS.

(Point to a child) WHAT DID THESE FARMERS (point) BRING TO MARKET TO SELL?

(Child responds)

If correct: YES. THEY BROUGHT THEIR EGGS TO MARKET TO SELL.
If incorrect: NO. THEY BROUGHT THEIR EGGS TO MARKET TO SELL. WHAT DID THESE FARMERS BRING TO MARKET TO SELL? Child responds; reinforce)

(Point to another child) DID ONE FARMER BRING MORE EGGS TO SELL THAN THE OTHER FARMER?

(Child responds)

If correct: THAT'S CORRECT. THEY BOTH BROUGHT THE SAME NUMBER OF EGGS TO MARKET.
If incorrect: NO. THEY BOTH BROUGHT THE SAME NUMBER OF EGGS TO MARKET. NOW TELL ME IF ONE FARMER BROUGHT MORE EGGS TO SELL THAN THE OTHER FARMER? (Child responds; reinforce)

(Point to another child) SHOULD ONE FARMER GET MORE MONEY FOR HIS EGGS THAN THE OTHER?

(Child responds)

If correct: THAT'S CORRECT. THEY BOTH BROUGHT THE SAME NUMBER OF EGGS TO MARKET SO THEY SHOULD GET THE SAME AMOUNT OF MONEY.
If incorrect: NO. THEY BOTH BROUGHT THE SAME NUMBER OF EGGS TO MARKET SO THEY SHOULD GET THE SAME AMOUNT OF MONEY. NOW TELL ME WHY THEY SHOULD GET THE SAME AMOUNT OF MONEY. (Child responds; reinforce)

Show Picture No. 8A

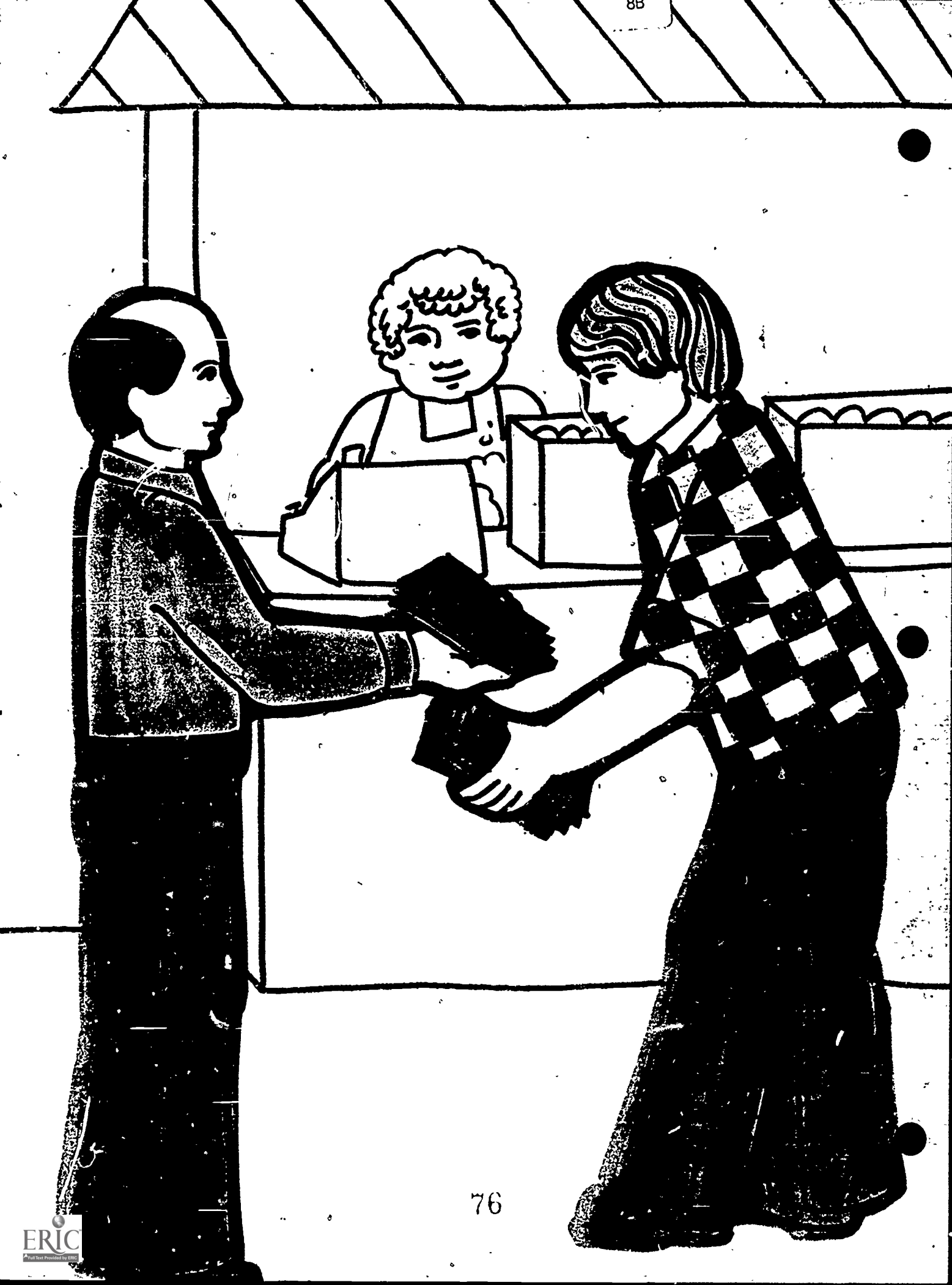
NOW LET'S PRETEND THAT THIS FARMER (point to man with 4 dollars) GOT MORE MONEY THAN THIS FARMER (point to man with 1 dollar). THIS IS NOT RIGHT. THEY BOTH BROUGHT THE SAME NUMBER OF EGGS TO SELL AT THE MARKET SO THEY SHOULD BOTH HAVE THE SAME MONEY.

(Point to a child) TELL ME WHY THIS FARMER (point to one with 1 dollar) SHOULD HAVE AS MUCH MONEY AS THIS FARMER (point to one with 4 dollars)

(Child responds)

If correct: YES. HE BROUGHT AS MANY EGGS TO SELL AS THIS FARMER (point to man with 4 dollars) SO HE SHOULD HAVE AS MUCH MONEY.

If incorrect: NO. HE BROUGHT AS MANY EGGS TO SELL AS THIS FARMER (point to man with 4 dollars) SO HE SHOULD HAVE AS MUCH MONEY. NOW TELL ME WHY HE SHOULD HAVE AS MUCH MONEY AS THE OTHER FARMER. (Child responds; reinforce)



Show Picture No. 8B

THIS PICTURE SHOWS BOTH FARMERS WITH THE SAME AMOUNT OF MONEY. THIS IS RIGHT BECAUSE THEY BOTH BROUGHT THE SAME NUMBER OF EGGS TO SELL AT THE MARKET.

(Point to a child) TELL ME WHY IT IS RIGHT FOR BOTH OF THESE FARMERS (point) TO HAVE THE SAME AMOUNT OF MONEY.

(Child respcnds)

If correct: YOU'RE CORRECT. THEY BOTH BROUGHT THE SAME NUMBER OF EGGS TO SELL AT THE MARKET SO THEY SHOULD HAVE THE SAME AMOUNT OF MONEY.

If incorrect: NO. THEY BOTH BROUGHT THE SAME NUMBER OF EGGS TO SELL AT THE MARKET SO THEY SHOULD HAVE THE SAME AMOUNT OF MONEY. NOW TELL ME WHY IT IS RIGHT FOR BOTH OF THESE FARMERS TO HAVE THE SAME AMOUNT OF MONEY. (Child responds; reinforce)

Show Picture No. 9

THESE CHILDREN ARE BROTHERS AND SISTER. (Point to boy setting table) IT IS THIS BOY'S JOB TO SET THE TABLE EVERY MORNING BEFORE BREAKFAST. (Point to boy making toast) IT IS THIS BOY'S JOB TO MAKE THE TOAST EVERY MORNING FOR BREAKFAST. (Point to girl making orange juice) IT IS THIS GIRL'S JOB TO MAKE THE ORANGE JUICE FOR BREAKFAST EVERY MORNING. EACH CHILD GETS ONE NICKEL FOR EVERY MORNING HE OR SHE DOES HIS OR HER JOB. THESE TWO BROTHERS DID THEIR JOB LIKE THEY WERE SUPPOSED TO EVERY MORNING (point to boys). THE SISTER (point to girl) DIDN'T DO HER JOB VERY OFTEN LIKE SHE WAS SUPPOSED TO. SO THE BOYS SHOULD GET MORE MONEY THAN THE GIRL.

(Point to a child) WHAT ARE THESE BROTHERS AND SISTER SUPPOSED TO DO EVERY MORNING?

(Child responds)

If correct: YES. THIS BOY (point to boy setting table) IS SUPPOSED TO SET THE TABLE EVERY MORNING BEFORE BREAKFAST. THIS BOY (point to boy making toast) IS SUPPOSED TO MAKE TOAST EVERY MORNING BEFORE BREAKFAST. THIS GIRL (point to girl) IS SUPPOSED TO MAKE THE ORANGE JUICE EVERY MORNING BEFORE BREAKFAST.

If incorrect: NO. THIS BOY (point to boy setting table) IS SUPPOSED TO SET THE TABLE EVERY MORNING BEFORE BREAKFAST. THIS BOY (point to boy making toast) IS SUPPOSED TO MAKE TOAST EVERY MORNING BEFORE BREAKFAST. THIS GIRL (point to girl) IS SUPPOSED TO MAKE THE ORANGE JUICE EVERY MORNING BEFORE BREAKFAST. NOW TELL ME WHAT THESE BROTHERS AND SISTER ARE SUPPOSED TO DO EVERY MORNING? (Child responds; reinforce)

(Point to another child) WHAT WILL EACH CHILD GET EVERY MORNING IF HE OR SHE DOES THE JOB?

(Child responds)

If correct: YES. EACH CHILD GETS ONE NICKEL FOR EVERY MORNING HE OR SHE DOES THE JOB.

If incorrect: NO. EACH CHILD GETS ONE NICKEL FOR EVERY MORNING HE OR SHE DOES THE JOB. NOW TELL ME WHAT EACH CHILD GETS EVERY MORNING IF HE OR SHE DOES THE JOB. (Child response)

(Point to another child) SHOW ME WHICH CHILD DID NOT DO THE JOB AS OFTEN AS THE OTHER TWO CHILDREN.

(Child responds)

If correct: YES. THE SISTER DID NOT DO HER JOB AS OFTEN AS THE BROTHERS DID. THE BROTHERS DID THEIR JOBS EVERY MORNING.

If incorrect: NO. THE SISTER DID NOT DO HER JOB AS OFTEN AS THE BROTHERS DID. NOW SHOW ME WHICH CHILD DID NOT DO THE JOB AS OFTEN AS THE OTHER TWO CHILDREN. (Child responds reinforce)

Show Picture No. 9A

NOW LET'S PRETEND THAT THE SISTER GOT SOME MONEY FOR DOING HER JOB BUT THE BROTHERS DID NOT GET ANY MONEY FOR DOING THEIR JOBS. THIS IS NOT RIGHT. THE BROTHERS SHOULD HAVE MORE MONEY THAN THE SISTER BECAUSE THEY DID THEIR JOBS EVERY MORNING. THE SISTER DIDN'T DO HER JOB VERY OFTEN LIKE SHE WAS SUPPOSED TO.

(Point to a child) TELL ME WHY THE BROTHERS SHOULD HAVE MORE MONEY THAN THEIR SISTER.

(Child responds)

If correct: THAT'S CORRECT. THE BROTHERS SHOULD HAVE MORE MONEY THAN THEIR SISTER BECAUSE THEY DID THEIR JOBS EVERY MORNING LIKE THEY WERE SUPPOSED TO. THE SISTER DIDN'T DO HER JOB AS OFTEN AS HER BROTHERS DID THEIRS.

If incorrect: NO. THE BROTHERS SHOULD HAVE MORE MONEY THAN THEIR SISTER BECAUSE THEY DID THEIR JOBS EVERY MORNING LIKE THEY WERE SUPPOSED TO. THE SISTER DIDN'T DO HER JOB AS OFTEN AS HER BROTHERS DID THEIRS. NOW TELL ME WHY THE BROTHERS SHOULD HAVE MORE MONEY THAN THEIR SISTER. (Child responds; reinforce)

Show Picture No. 9B

NOW LET'S PRETEND THAT THE BROTHERS GOT PAID FOR DOING THEIR JOBS EVERY MORNING, BUT THE SISTER DIDN'T GET ANY MONEY AT ALL. THIS IS NOT RIGHT. THE SISTER SHOULD HAVE A LITTLE MONEY BECAUSE SHE DID HER JOB FOR A FEW MORNINGS. THE BOYS SHOULD HAVE MORE MONEY BECAUSE THEY DID THEIR JOBS EVERY MORNING LIKE THEY WERE SUPPOSED TO.

(Point to a child) TELL ME WHY THE SISTER SHOULD HAVE A LITTLE MONEY.

(Child responds)

If correct: YES. THE SISTER SHOULD HAVE A LITTLE MONEY BECAUSE SHE DID HER JOB FOR A FEW MORNINGS. THE BOYS SHOULD HAVE MORE MONEY BECAUSE THEY DID THEIR JOBS EVERY MORNING LIKE THEY WERE SUPPOSED TO.

If incorrect: NO. THE SISTER SHOULD HAVE A LITTLE MONEY BECAUSE SHE DID HER JOB FOR A FEW MORNINGS. THE BOYS SHOULD HAVE MORE MONEY BECAUSE THEY DID THEIR JOBS EVERY MORNING LIKE THEY WERE SUPPOSED TO. NOW TELL ME WHY THE SISTER SHOULD HAVE A LITTLE MONEY. (Child responds; reinforce)

Show Picture No. 9C

NOW WE SEE THAT ALL OF THE BROTHERS AND SISTER HAVE SOME MONEY. THE BROTHERS HAVE MORE MONEY THAN THEIR SISTER BECAUSE THEY DID THEIR JOBS EVERY MORNING LIKE THEY WERE SUPPOSED TO. THE SISTER DIDN'T DO HER JOB AS OFTEN AS HER BROTHERS DID THEIRS. SO THIS IS RIGHT THAT THE BROTHERS HAVE MORE MONEY THAN THEIR SISTER.

(Point to a child) TELL ME WHY IT IS RIGHT THAT THE BROTHERS HAVE MORE MONEY THAN THEIR SISTER.

(Child responds)

If correct: YES. THE BROTHERS SHOULD HAVE MORE MONEY BECAUSE THEY DID THEIR JOBS EVERY MORNING LIKE THEY WERE SUPPOSED TO. THE SISTER SHOULDN'T HAVE AS MUCH MONEY BECAUSE SHE DIDN'T DO HER JOB AS OFTEN AS THE BROTHERS DID THEIRS.

If incorrect: NO. THE BROTHERS SHOULD HAVE MORE MONEY BECAUSE THEY DID THEIR JOBS EVERY MORNING LIKE THEY WERE SUPPOSED TO. THE SISTER SHOULDN'T HAVE AS MUCH MONEY BECAUSE SHE DIDN'T DO HER JOB AS OFTEN AS THE BROTHERS DID THEIRS. NOW TELL ME WHY IT IS RIGHT THAT THE BROTHERS HAVE MORE MONEY THAN THEIR SISTER. (Child responds; reinforce)

PRACTICE

Show Picture No. 10

THESE TWO WOMEN ARE GRANDMOTHERS (point). THEY ARE BAKING COOKIES TO SELL AT A BAKE SALE. THEY GET ONE DOLLAR FOR EACH PLATE OF COOKIES THEY MAKE. BOTH GRANDMOTHERS MADE TWO PLATES OF COOKIES EACH (point to the two plates of cookies in each half of the picture).

(Point to a child) TELL ME WHAT THESE GRANDMOTHERS ARE MAKING.

(Child responds)

If correct: YES. THEY ARE MAKING COOKES TO SELL AT A BAKE SALE.
If incorrect: NO. THEY ARE MAKING COOKIES TO SELL AT A BAKE SALE. WHAT ARE THEY MAKING? (Child responds; reinforce)

(Point to another child) WHAT WILL THE GRANDMOTHERS GET FOR EACH PLATE OF COOKIES THEY MAKE?

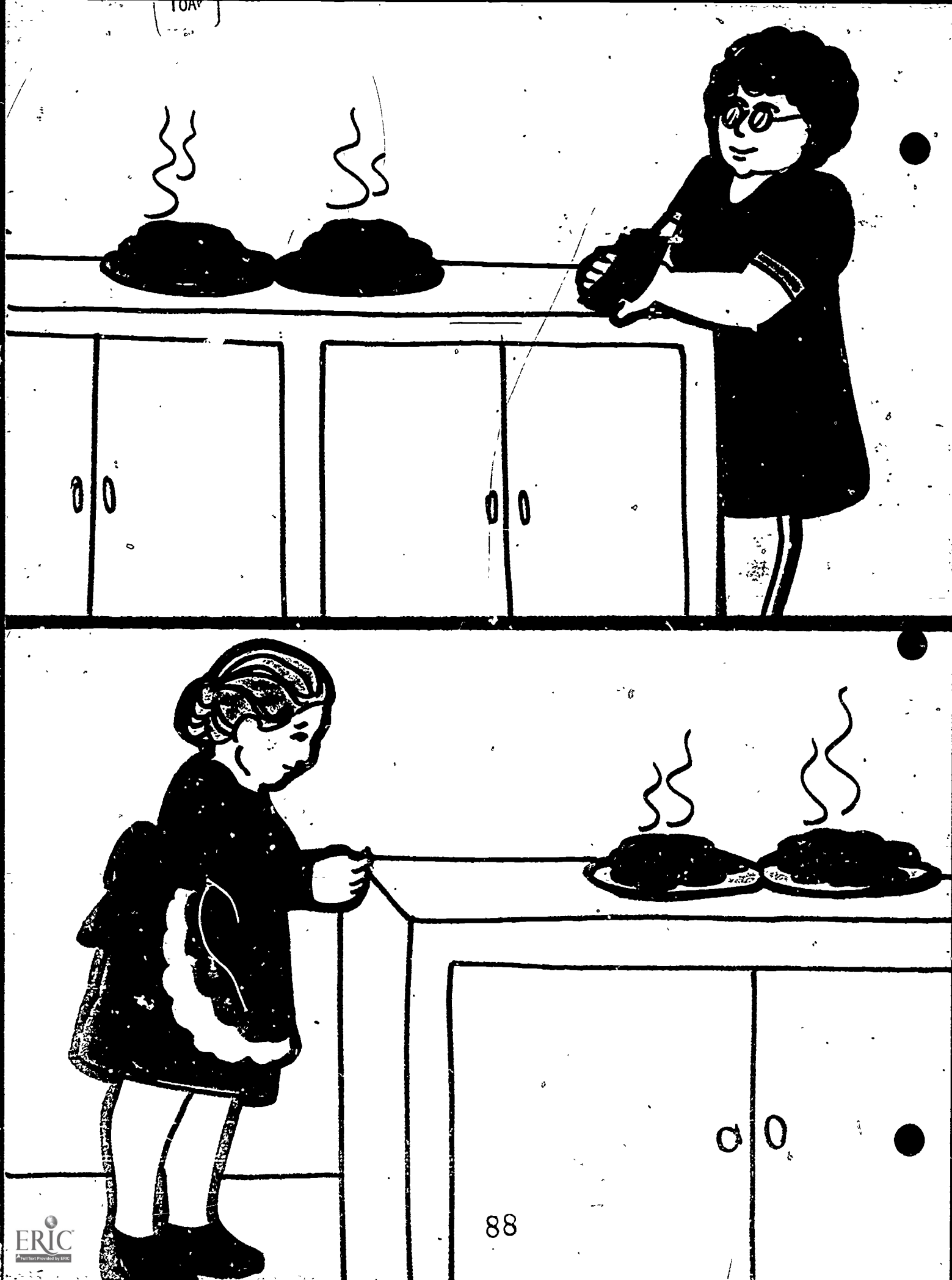
(Child responds)

If correct: YES. THEY GET ONE DOLLAR FOR EACH PLATE OF COOKIES THEY MAKE.
If incorrect: NO. THEY GET ONE DOLLAR FOR EACH PLATE OF COOKIES THEY MAKE. WHAT WILL THEY GET FOR EACH PLATE OF COOKIES THEY MAKE? (Child responds; reinforce)

(Point to another child) DID ONE GRANDMOTHER MAKE MORE COOKIES THAN THE OTHER?

(Child responds)

If correct: YOU ARE CORRECT. BOTH GRANDMOTHERS MADE TWO PLATES OF COOKIES.
If incorrect: NO. BOTH GRANDMOTHERS MADE TWO PLATES OF COOKIES. NOW TELL ME IF ONE GRANDMOTHER MADE MORE COOKIES THAN THE OTHER. (Child responds; reinforce)



Show Picture No. 10A

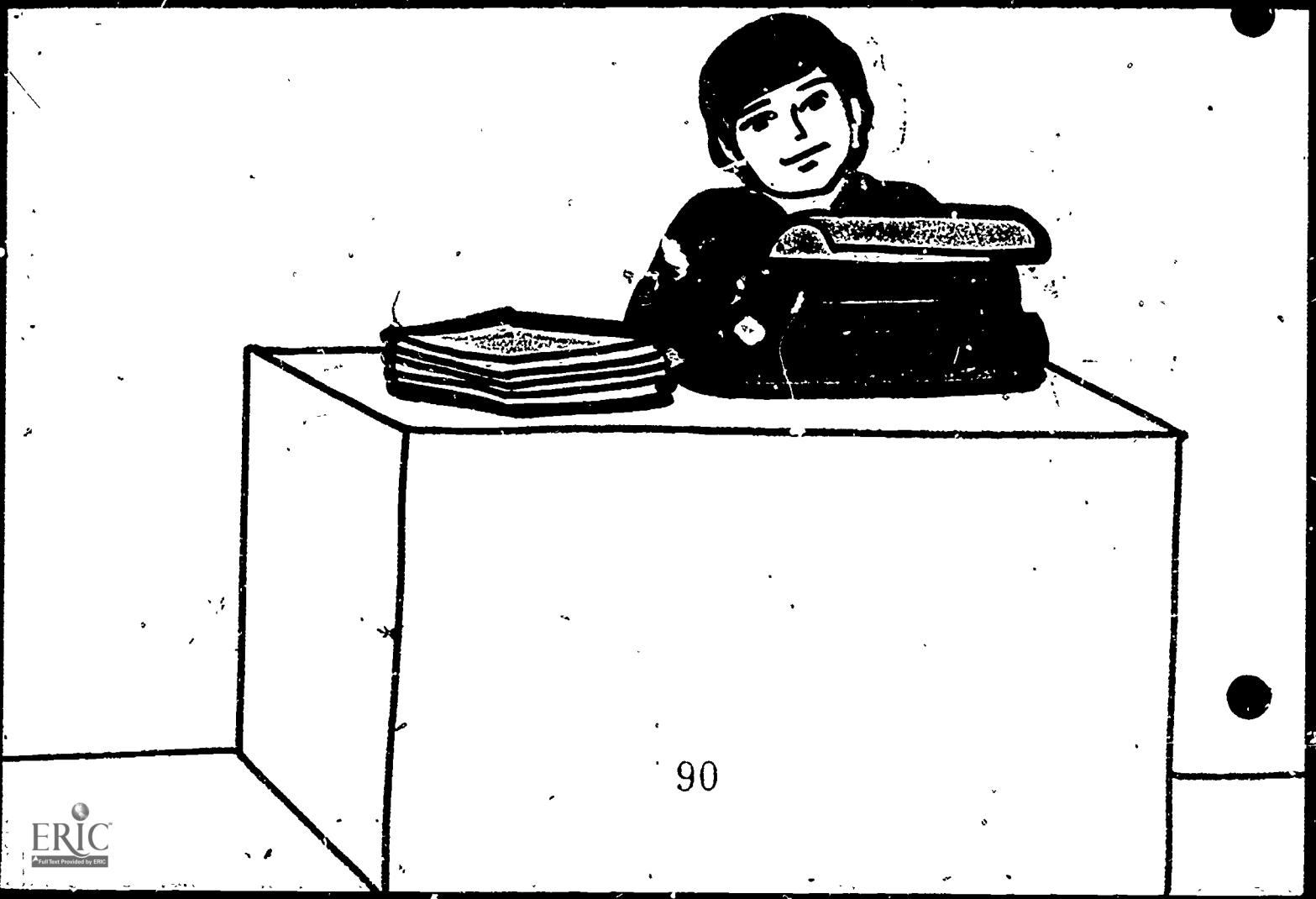
BOTH GRANDMOTHERS MADE TWO PLATES OF COOKIES EACH (point to cookies in top and bottom half). THIS GRANDMOTHER (point to woman with money) RECEIVED TWO DOLLARS FOR HER COOKIES. THIS GRANDMOTHER (point to woman without money) DID NOT RECEIVE ANY MONEY FOR HER COOKIES.

(Point to a child) IS IT RIGHT FOR THIS GRANDMOTHER (point to top half) TO GET MONEY FOR HER COOKIES BUT FOR THIS GRANDMOTHER (point to bottom half) NOT TO GET ANY MONEY FOR HER COOKIES?

(Child responds)

If correct: YOU ARE CORRECT. IT IS NOT RIGHT FOR THIS GRANDMOTHER NOT TO GET ANY MONEY FOR HER COOKIES (point to woman in lower half) BECAUSE SHE MADE AS MANY COOKIES AS THE OTHER GRANDMOTHER (point to top half) SO SHE SHOULD HAVE AS MUCH MONEY AS THE OTHER GRANDMOTHER.

If incorrect: NO. IT IS NOT RIGHT FOR THIS GRANDMOTHER NOT TO GET ANY MONEY FOR HER COOKIES (point to woman in lower half) BECAUSE SHE MADE AS MANY COOKIES AS THE OTHER GRANDMOTHER. TELL ME WHY THIS GRANDMOTHER (point to bottom half) SHOULD HAVE AS MUCH MONEY AS THIS GRANDMOTHER (point to top half). (Child responds; reinforce)



Show Picture No. 11

THESE TWO PEOPLE ARE COLLEGE STUDENTS (point to the fellow and the girl). THEY ARE EARNING MONEY TO PAY FOR GOING TO COLLEGE BY TYPING PAPERS FOR OTHER STUDENTS. THEY GET SOME MONEY FOR EVERY PAGE THEY TYPE. THIS MAN (point to lower half) WORKED LONGER THAN THE WOMAN (point to upper half) SO HE TYPED MORE PAGES (point) THAN THE WOMAN DID (point).

(Point to a child) TELL ME WHAT EACH OF THESE COLLEGE STUDENTS ARE DOING.

(Child responds)

If correct: YES. THEY ARE TYPING PAPERS FOR OTHER STUDENTS TO PAY FOR GOING TO COLLEGE.
If incorrect: NO. THEY ARE TYPING PAPERS FOR OTHER STUDENTS TO PAY FOR GOING TO COLLEGE. WHAT IS IT THESE STUDENTS ARE DOING?
(Child responds; reinforce)

(Point to another child) WHAT WILL EACH OF THESE STUDENTS GET FOR EVERY PAGE THEY TYPE?

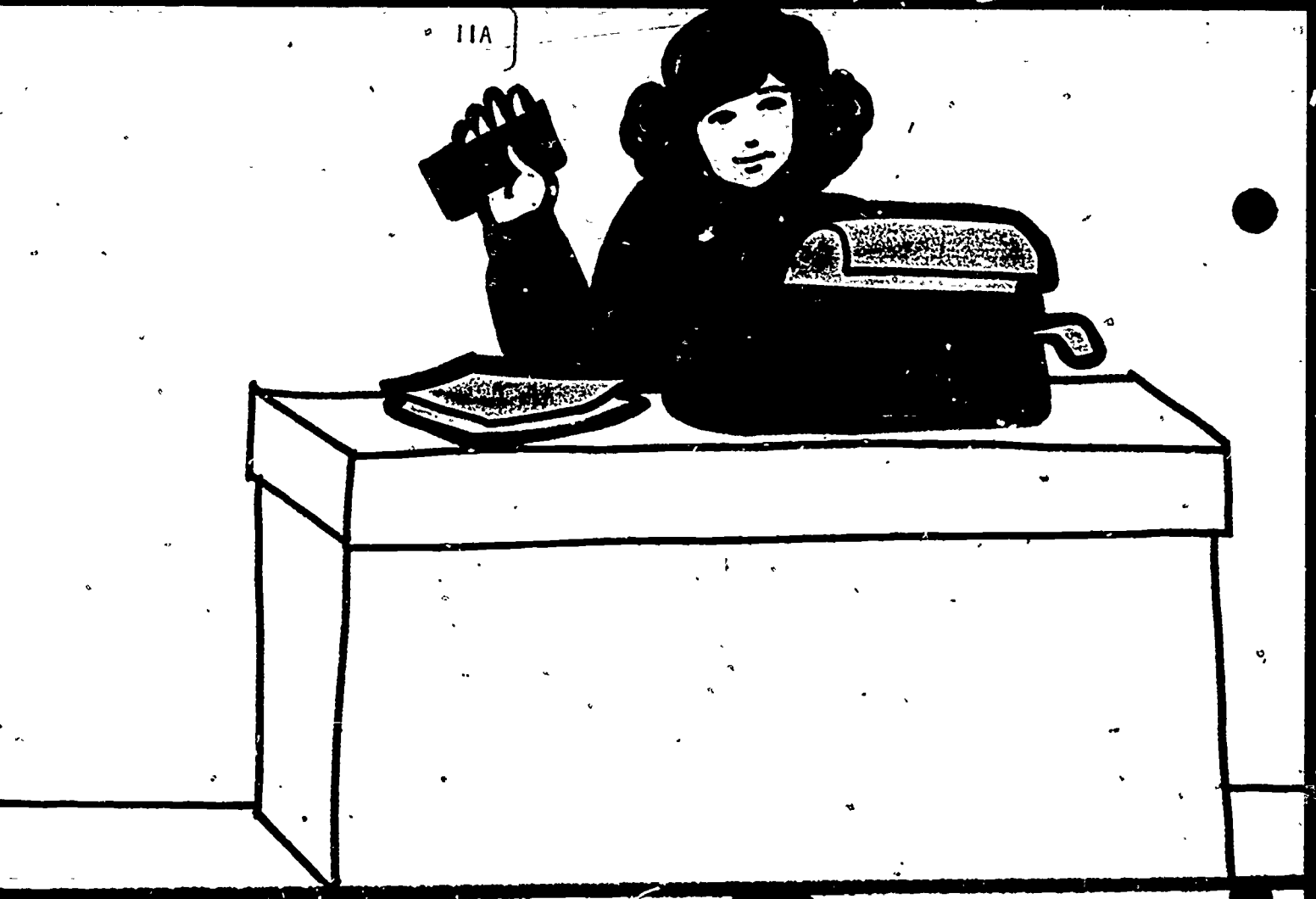
(Child responds)

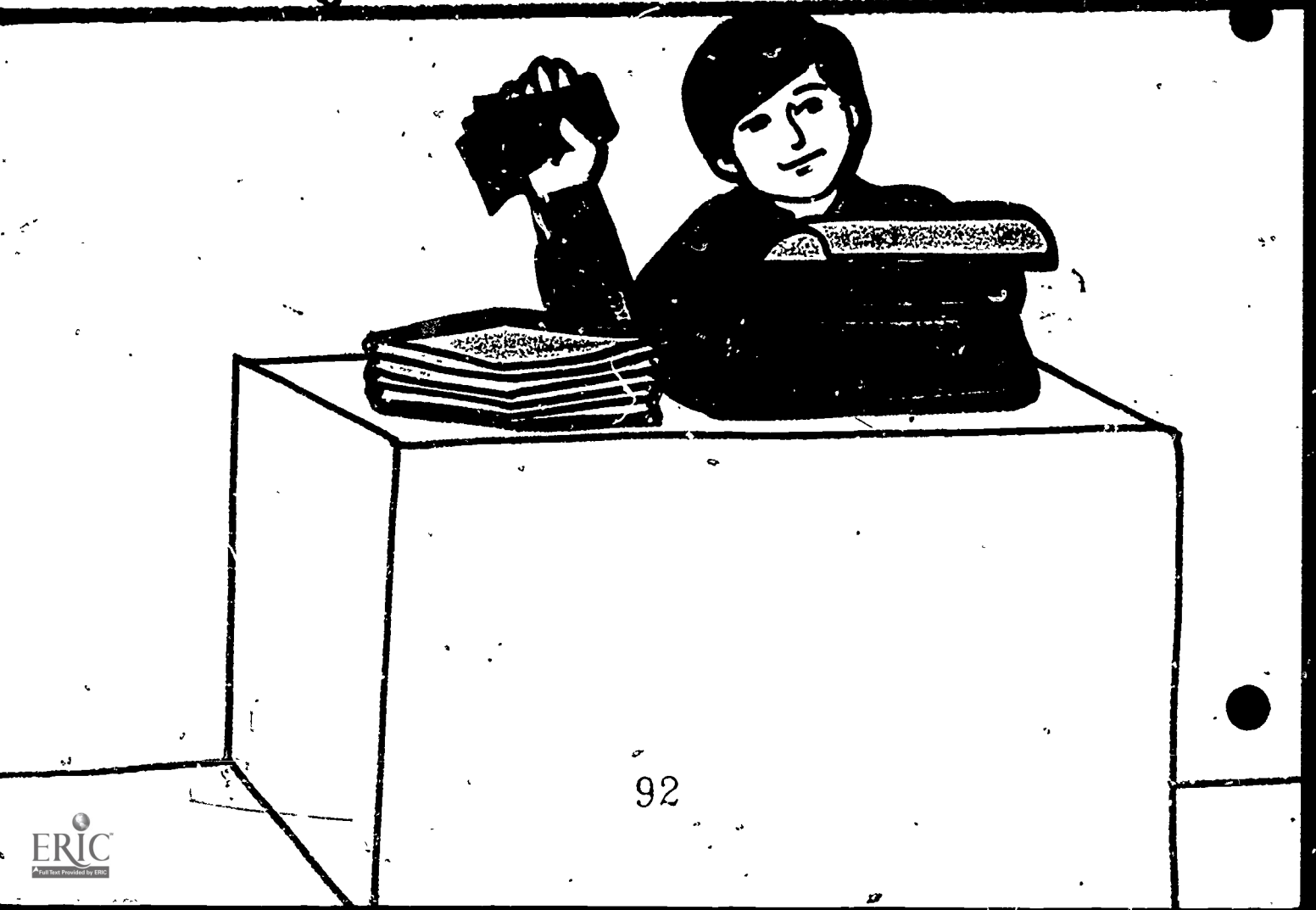
If correct: YES. THEY GET SOME MONEY FOR EVERY PAGE THEY TYPE.
If incorrect: NO. THEY GET SOME MONEY FOR EVERY PAGE THEY TYPE. WHAT WILL EACH OF THESE STUDENTS GET FOR EVERY PAGE THEY TYPE?
(Child responds; reinforce)

(Point to another child) WHICH STUDENT TYPED MORE PAGES THAN THE OTHER?

(Child responds)

If correct: YES. THIS MAN (point) TYPED MORE PAGES THAN THE WOMAN (point).
If incorrect: NO. THIS MAN (point) TYPED MORE PAGES THAN THE WOMAN (point). WHICH STUDENT TYPED MORE PAGES THAN THE OTHER?
(Child responds; reinforce)





Show Picture No. 11A

THIS STUDENT (point to lower half) TYPED MORE PAGES THAN THIS STUDENT (point to upper half). THIS STUDENT RECEIVED MORE MONEY (point) THAN THIS STUDENT (point).

(Point to a child) IS IT RIGHT FOR THIS STUDENT (point to lower half) TO HAVE MORE MONEY THAN THIS STUDENT (point to upper half)?

(Child responds)

If correct: YES. THIS STUDENT (point to lower half) SHOULD HAVE MORE MONEY BECAUSE HE TYPED MORE PAGES THAN THIS STUDENT (point to upper half).

If incorrect: NO. THIS STUDENT (point to lower half) TYPED MORE PAGES THAN THIS STUDENT (point to upper half) SO HE SHOULD HAVE MORE MONEY THAN THIS STUDENT (point to upper half). TELL ME WHY IT IS RIGHT FOR THIS STUDENT (point to lower half) TO HAVE MORE MONEY THAN THIS STUDENT (point to upper half). (Child responds; reinforce)

Show Picture No. 12

THESE GIRLS ARE FRIENDS WHO ARE SUPPOSED TO BE PICKING UP ROCKS FROM THE GARDEN AND PUTTING THEM IN CANS TO BE THROWN AWAY. THEY GET ONE DIME FOR EVERY CAN THEY FILL WITH ROCK THIS GIRL (point t child on left) WORKED VERY HARD AND FILLED FIVE NS WITH ROCKS. THIS GIRL (point to child on right) ONLY FILLED TWO CANS WITH ROCKS BEFORE SHE DECIDED SHE WOULD RATHER PLAY WITH HER TOY DUMP TRUCK.

(Point to a child) TELL ME WHAT THESE GIRLS ARE SUPPOSED TO BE DOING.

(Child responds)

If correct: YES. THEY ARE SUPPOSED TO BE PICKING UP ROCKS FROM THE GARDEN AND PUTTING THEM IN CANS TO BE THROWN AWAY.
If incorrect: NO. THEY ARE SUPPOSED TO BE PICKING UP ROCKS FROM THE GARDEN AND PUTTING THEM IN CANS TO BE THROWN AWAY. WHAT ARE THESE GIRLS SUPPOSED TO BE DOING? (Child responds; reinforce)

(Point to another child) WHAT WILL THEY GET FOR EVERY CAN THEY FILL WITH ROCKS?

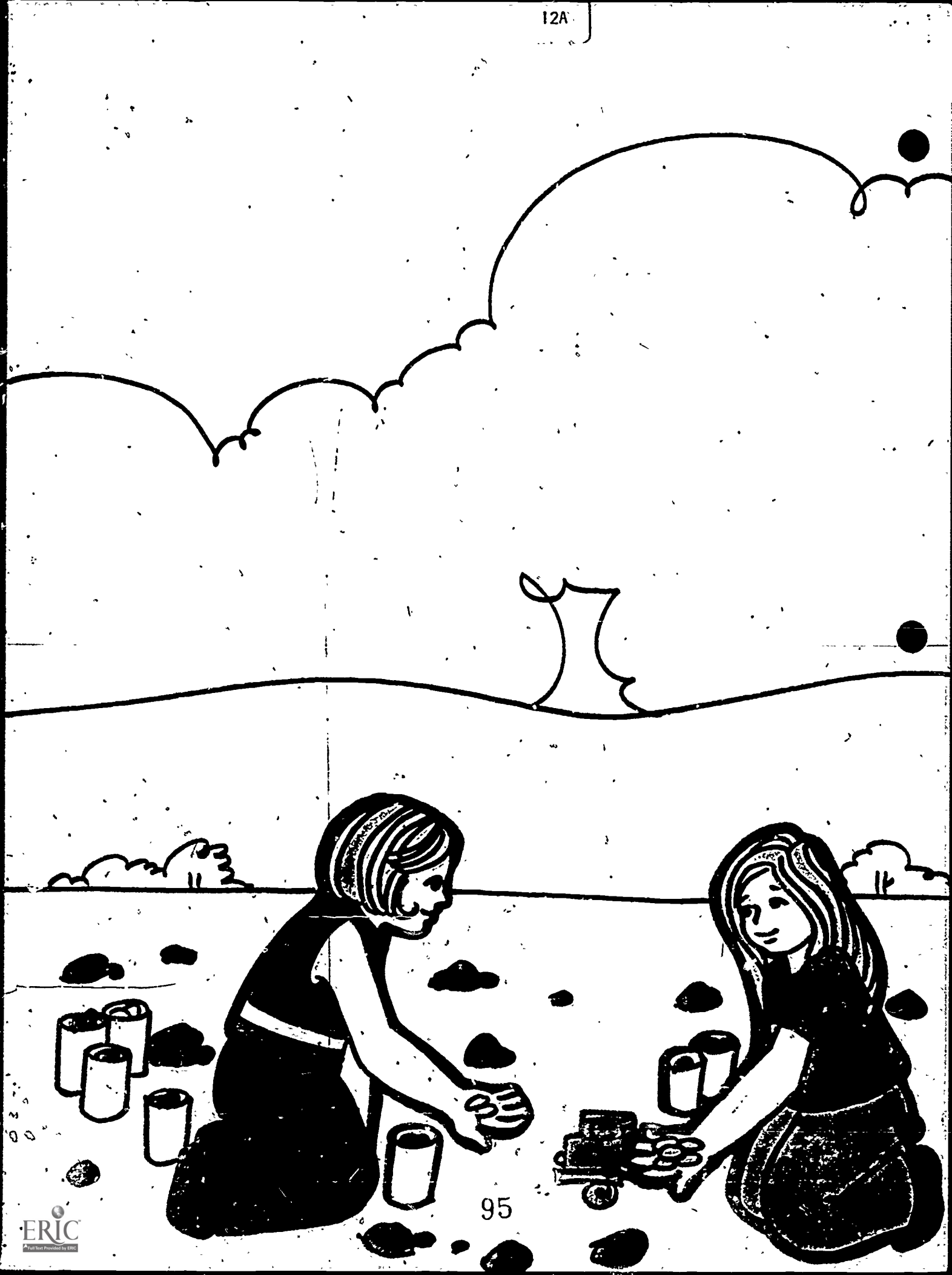
(Child responds)

If correct: YES. THEY GET ONE DIME FOR EVERY CAN THEY FILL WITH ROCKS.
If incorrect: NO. THEY GET ONE DIME FOR EVERY CAN THEY FILL WITH ROCKS. WHAT WILL THEY GET FOR EVERY CAN THEY FILL WITH ROCKS? (Child responds; reinforce)

(Point to another child) WHICH CHILD WORKED THE HARDEST AND FILLED THE MOST CANS WITH ROCKS?

(Child responds)

If correct: YES. THIS GIRL (point to child on left) WORKED THE HARDEST AND FILLED THE MOST CANS WITH ROCKS.
If incorrect: NO. THIS GIRL (point to child on left) WORKED THE HARDEST AND FILLED THE MOST CANS WITH ROCKS. WHICH CHILD WORKED THE HARDEST AND FILLED THE MOST CANS WITH ROCKS? (Child responds; reinforce)



Show Picture No. 12A

THIS GIRL (point to child on left) WORKED VERY HARD AND FILLED FIVE CANS WITH ROCKS. SHE DOESN'T HAVE AS MUCH MONEY IN HER HAND AS THIS GIRL (point to girl with dump truck) WHO FILLED ONLY TWO CANS WITH ROCKS BEFORE SHE DECIDED TO PLAY WITH HER DUMP TRUCK.

(Point to a child) IS IT RIGHT FOR THIS CHILD (point to girl with dump truck) TO HAVE MORE MONEY THAN THIS GIRL (point to girl on left)?

(Child responds)

If correct: YOU ARE CORRECT. IT IS NOT RIGHT FOR THIS GIRL (point to girl with dump truck) TO HAVE MORE MONEY THAN THIS GIRL (point to child on left) BECAUSE SHE DIDN'T WORK AS HARD AND FILL AS MANY CANS WITH ROCKS.

If incorrect: NO. IT IS NOT RIGHT FOR THIS GIRL (point to girl with dump truck) TO HAVE MORE MONEY THAN THIS GIRL (point to child or left) BECAUSE SHE DIDN'T WORK AS HARD AND FILL AS MANY CA WITH ROCKS. TELL ME WHY IT IS NOT RIGHT FOR THIS CHILD (oint to girl with dump truck) TO HAVE MORE MONEY THAN THIS GIRL (point to child on left). (Child responds; reinforce).

YOU ALL HAVE BEEN GOOD THINKERS. YOU WATCHED AND LISTENED CAREFULLY AND WERE GOOD LEARNERS. NOW YOU MAY (describe the next activity planned for the children in the preschool).

End of Lesson 2

Posttest

INSTRUCTIONS FOR EXAMINER:

Go to the student teacher assigned to help you select the children for testing. With her help, if necessary, invite the child to accompany you to the testing area to "play a game." Seat the child where it will be the easiest for you to turn the pages and point to items on each picture and also see the narrative and keep score and write comments on the child's record form. Tell the child you want him or her to look at some pictures and to help you decide the right thing for each picture. If the child is uncomfortable, engage in informal conversation to help the child relax. If the child asks if this is a test, say that it is a game, that you need to know what the child thinks about some things that happen to children and to grown-ups. If the child asks during the test how he/she is doing, simply say something like, "You are doing good thinking" or "You have some interesting ideas," etc. Never tell the child whether or not he or she is correct on any item.

There are two parts to this posttest. The first part is the 10-item objective test. The second part is a two-phase behavioral test. The instructions for the behavioral test follow the narration for the objective test.

Be sure to use the record forms assigned to the children. Write their "why" answers in as short a sentence each as possible.

Materials Needed for Objective Test

Test booklet
Record form for each child
Pen or pencil

Materials Needed for Behavioral Test

Record form for each child
Pen or pencil
Set of example dot-to-dot pictures
2 sets of itzy-bitzies for each child (6 in each set)
Clown dot-to-dot form for child to complete
Umbrella dot-to-dot form for child to complete
Crayons


SALLY

OBJECTIVE TEST

Picture 1

Say THESE GIRLS (point) ARE LEARNING TO MAKE THEIR BEDS. EVERY TIME EACH GIRL MAKES HER BED HER MOTHER GIVES HER A TOOTSIE ROLL. EACH GIRL MADE HER BED THE SAME NUMBER OF TIMES.

WHAT ARE THE GIRLS LEARNING TO DO?
WHAT DOES EACH GIRL GET WHEN SHE MAKES HER BED?
DID ONE GIRL MAKE HER BED MORE THAN THE OTHER?
(Child responds--correct if necessary)


SALLY

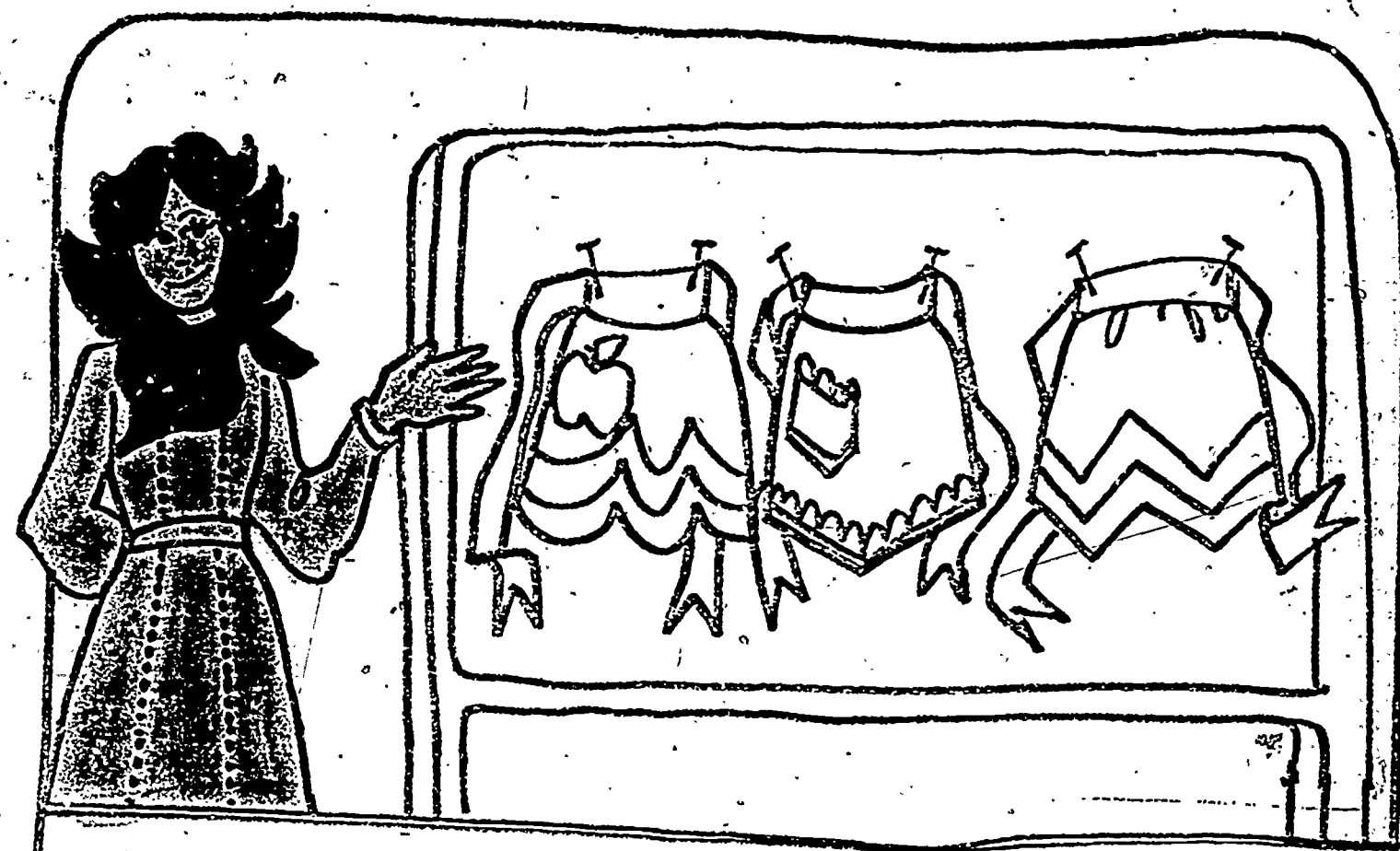
Picture 1A

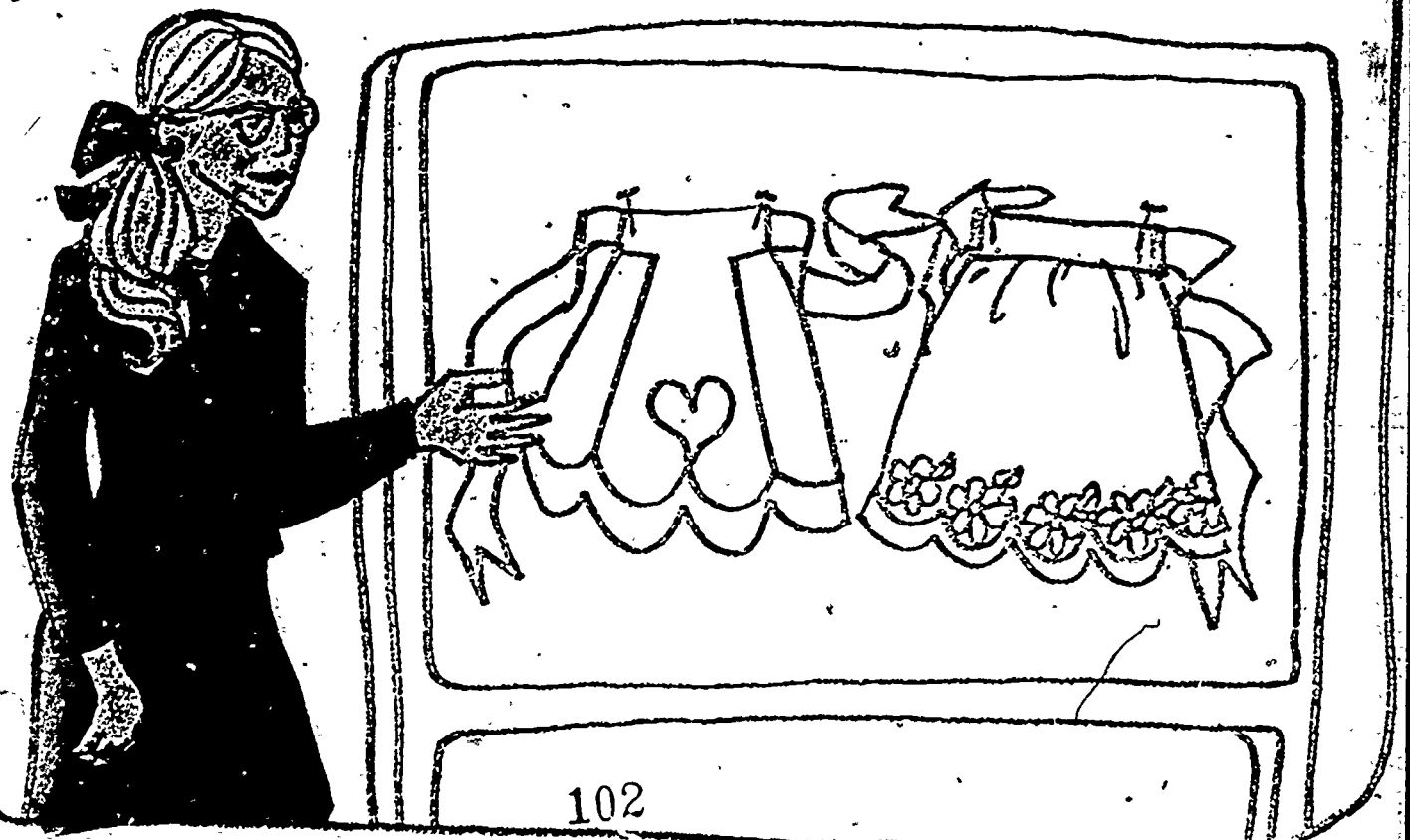
Say THE OLDER SISTER (point to girl in blue) MADE HER BED AS MANY TIMES AS THE YOUNGER SISTER (point to girl in pink). THE OLDER SISTER (point) HAS AS MANY TOOTSIE ROLLS (point) AS THE YOUNGER SISTER (point to tootsie rolls of girl in pink).

IS THIS RIGHT FOR BOTH SISTERS TO HAVE THE SAME NUMBER OF TOOTSIE ROLLS?

TELL ME WHY YOU THINK SO.

(Child responds--do not tell child whether correct or not)

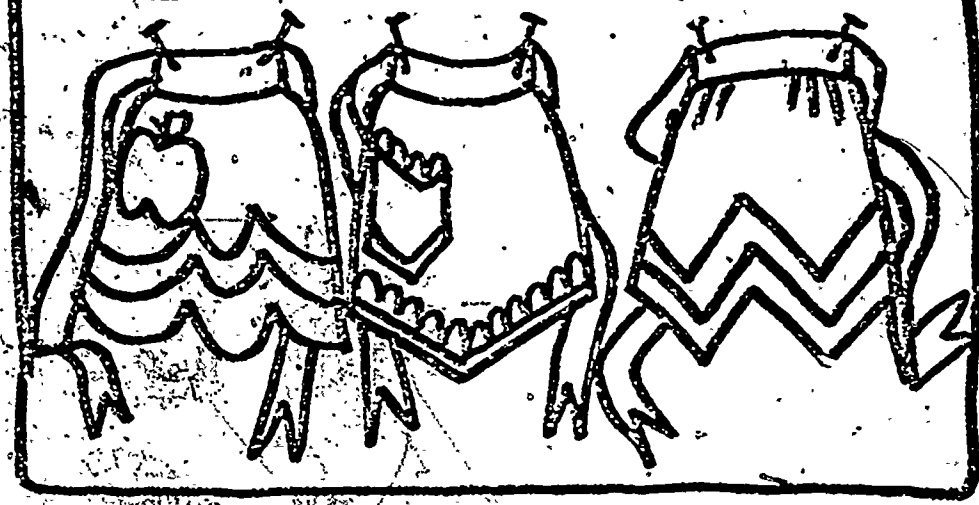


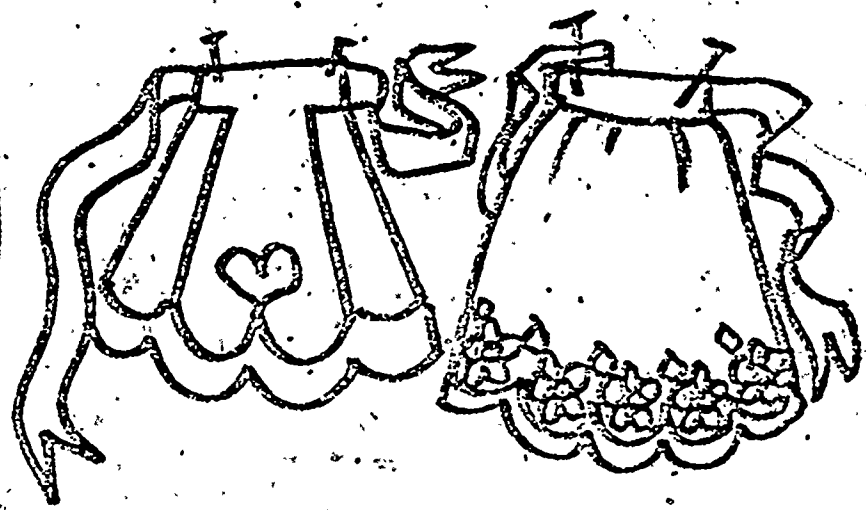


Picture 2

Say THIS WOMAN (point to woman in pink) MADE THREE APRONS TO SELL (count aprons as you point to them). THIS WOMAN (point to woman in blue) MADE TWO APRONS TO SELL (count aprons as you point to them). THIS WOMAN IN PINK SOLD ALL HER APRONS (point to woman and aprons). THIS WOMAN IN BLUE SOLD ALL HER APRONS (point to woman and aprons).

WHAT DID THE WOMEN MAKE TO SELL?
HOW MANY APRONS DID THIS WOMAN MAKE? (point to woman in pink)
HOW MANY APRONS DID THIS WOMAN MAKE? (point to woman in blue)
WHO SOLD MORE APRONS?
(Child responds--correct if necessary)





Picture 2A

Say THE WOMAN IN PINK SOLD ALL THREE OF HER APRONS. SHE HAS TWO DOLLARS IN HER HAND (point). THIS WOMAN IN BLUE SOLD HER TWO APRONS. SHE HAS THREE DOLLARS IN HER HANDS (point). THE WOMAN IN BLUE HAS MORE MONEY THAN THE WOMAN IN PINK (point).

IS IT RIGHT FOR THE WOMAN IN BLUE TO HAVE MORE MONEY THAN THE WOMAN IN PINK (point).

WHY DO YOU THINK SO?

(Child responds--do not tell child whether correct or not)


5

Picture 3

Say THESE CHILDREN ARE IN THE FIFTH GRADE (point to the four children). THEY ARE SUPPOSED TO CLEAN UP THE GARBAGE ON THE SCHOOL GROUNDS DURING RECESS FOR ONE WEEK. IF THEY DO THEIR WORK THEIR TEACHER (point) WILL GIVE EACH OF THEM A FAVORITE BOOK TO KEEP. EACH CHILD CLEANED UP THE GARBAGE DURING RECESS FOR ONE WEEK.

WHAT WERE THE CHILDREN SUPPOSED TO DO?
WHAT WERE THEY GOING TO GET FOR A REWARD IF THEY DID WHAT THEY WERE SUPPOSED TO DO?
DID THEY ALL DO WHAT THEY WERE SUPPOSED TO DO?
(Child responds--correct if necessary)


5

Picture 3A

Say EACH OF THESE CHILDREN (point) CLEANED UP GARBAGE ON THE SCHOOL GROUNDS DURING RECESS FOR ONE WEEK. ONLY THESE TWO CHILDREN RECEIVED BOOKS FROM THEIR TEACHER (point).

IS IT RIGHT FOR THESE TWO CHILDREN (point to 2 children with books) TO GET BOOKS BUT NOT THESE TWO CHILDREN (point to 2 children without books)?

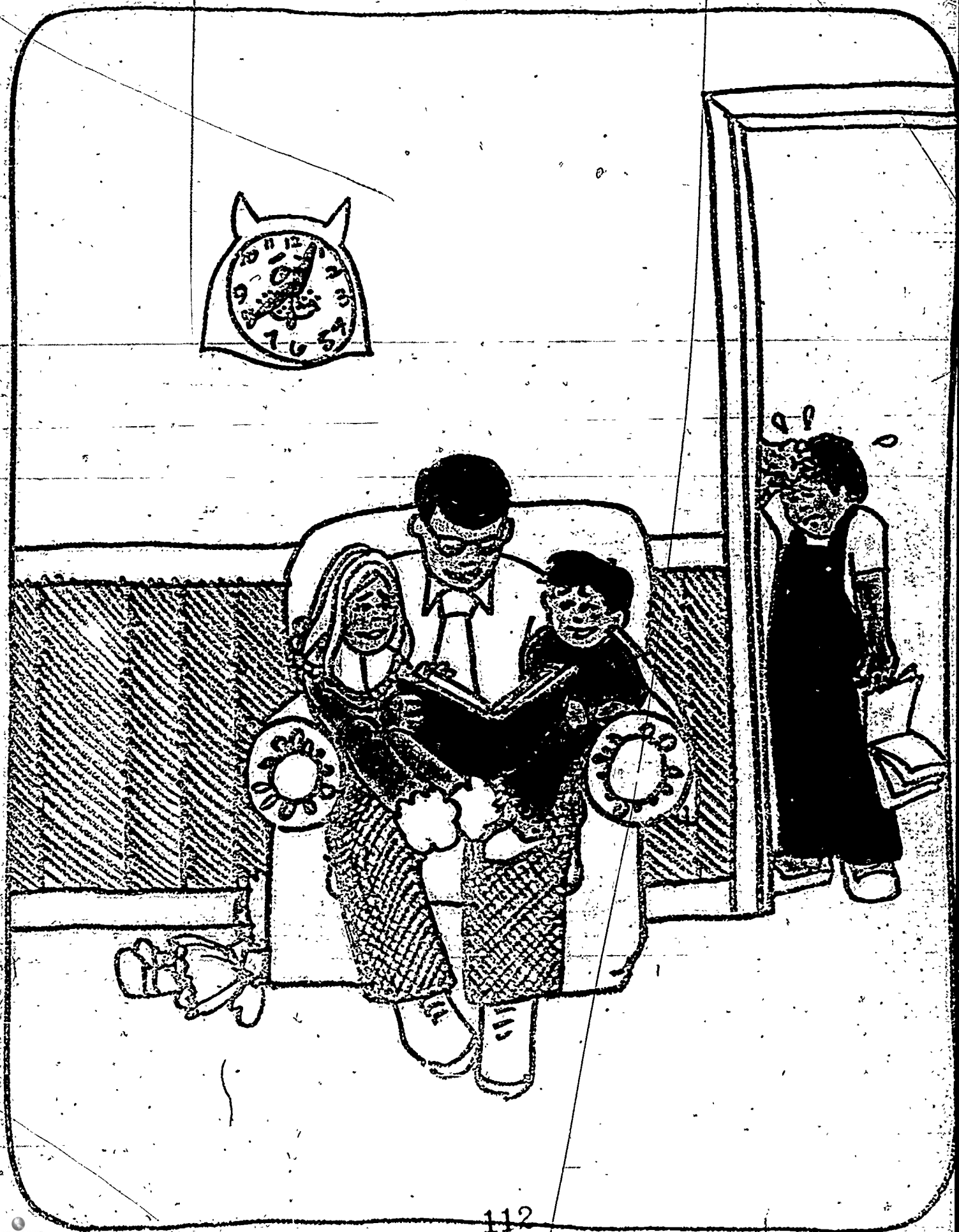
WHY DO YOU THINK SO?

(Child responds--do not tell child whether correct or not)

Picture 4

Say THESE CHILDREN ARE SUPPOSED TO BE GETTING READY FOR BED (point). THEIR FATHER (point) WILL READ THEM A STORY IF THEY ARE READY FOR BED BY 8 O'CLOCK. ANY CHILD WHO IS NOT READY FOR BED BY 8 O'CLOCK WON'T BE ABLE TO HEAR A STORY. THESE TWO CHILDREN (point to girl in pink and boy in green) GET READY FOR BED BY 8 O'CLOCK. THIS CHILD (point to boy in chair) DAWDLED AND READ A BOOK SO HE WASN'T READY FOR BED BY 8 O'CLOCK.

WHAT WERE THE CHILDREN SUPPOSED TO DO?
WHAT WOULD HAPPEN IF THEY WERE READY FOR BED AT 8 O'CLOCK?
WHAT WOULD HAPPEN IF THEY WERE NOT READY FOR BED AT 8 O'CLOCK?
WHO WAS READY FOR BED BY 8 O'CLOCK? WHO WAS NOT READY?
(Child responds--correct if necessary.)



Picture 4A

Say THESE TWO CHILDREN WERE READY FOR BED BY 8 O'CLOCK (point to children in father's lap). THEIR FATHER IS READING THEM A STORY. THIS CHILD (point to boy in blue) IS NOT READY FOR BED. HE CANNOT HEAR A STORY.

IS IT RIGHT FOR THESE TWO CHILDREN (point to children in their father's lap) TO HEAR A STORY BUT FOR THIS CHILD (point to child in blue) NOT TO HEAR A STORY?

WHY DO YOU THINK SO?

(Child responds--do not tell child whether correct or not)

Picture 5

Say THIS IS THE OLDER BROTHER (point to boy on left) AND THIS IS THE YOUNGER BROTHER (point to boy on right). THEY ARE WORKING IN THEIR FATHER'S GARDEN. THEY GET ONE DOLLAR FOR EVERY HOUR THEY WORK IN THE GARDEN. THE YOUNGER BROTHER (point to boy on right) WORKS LONGER THAN THE OLDER BROTHER (point to boy on left).

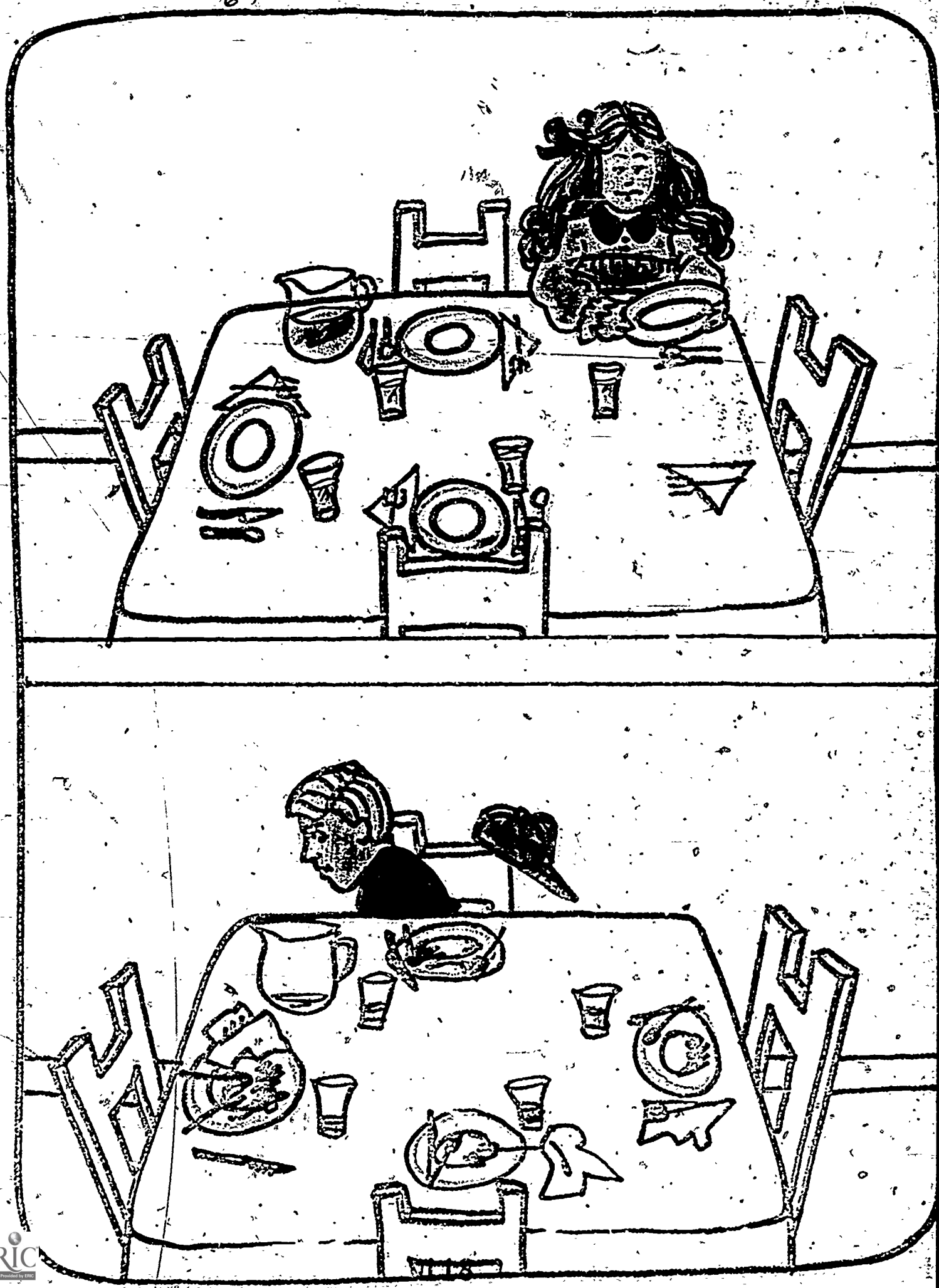
WHAT ARE THE BOYS DOING?
WHAT WILL THEY GET FOR EVERY HOUR THEY WORK IN THE GARDEN?
WHICH BOY WORKED LONGER THAN THE OTHER ONE?
(Child responds--correct if necessary)

5A

Picture 5A

Say THE YOUNGER BROTHER (point to boy on right) WORKED LONGER THAN HIS OLDER BROTHER (point to boy on left). THE YOUNGER BROTHER HAS MORE MONEY (point to money in hands of boy on right) THAN HIS OLDER BROTHER (point to money in hands of boy on left).

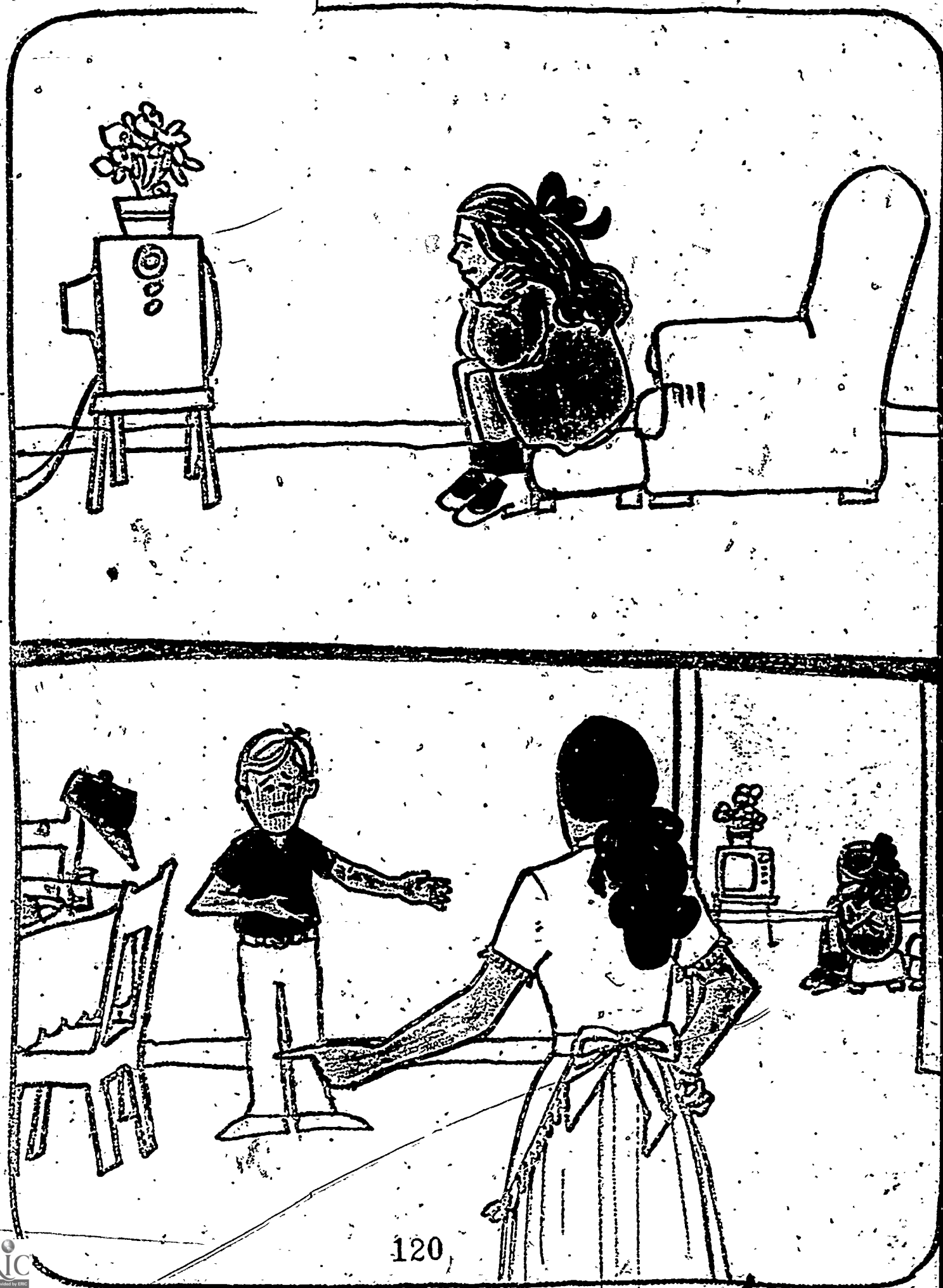
IS IT RIGHT FOR THE YOUNGER BROTHER (point to boy on right) TO HAVE MORE MONEY THAN THE OLDER BROTHER (point to boy on the left)?
WHY DO YOU THINK SO?
(Child responds--do not tell child whether correct or not).



Picture 6

Say ANN'S JOB IS TO SET THE TABLE (point to girl). HER BROTHER, BOB'S, JOB (point to boy) IS TO CLEAR THE TABLE. IF THEY DO THEIR JOB THEY GET TO WATCH TV AFTER DINNER. ANN DID HER JOB OF SETTING THE TABLE (point). BOB DIDN'T DO HIS JOB OF CLEARING THE TABLE (point).

WHAT ARE THESE CHILDREN SUPPOSED TO DO?
WHAT WILL THEY GET IF THEY DO IT?
WHICH CHILD DID THE JOB? WHICH CHILD DIDN'T?
(Child responds--correct if necessary)



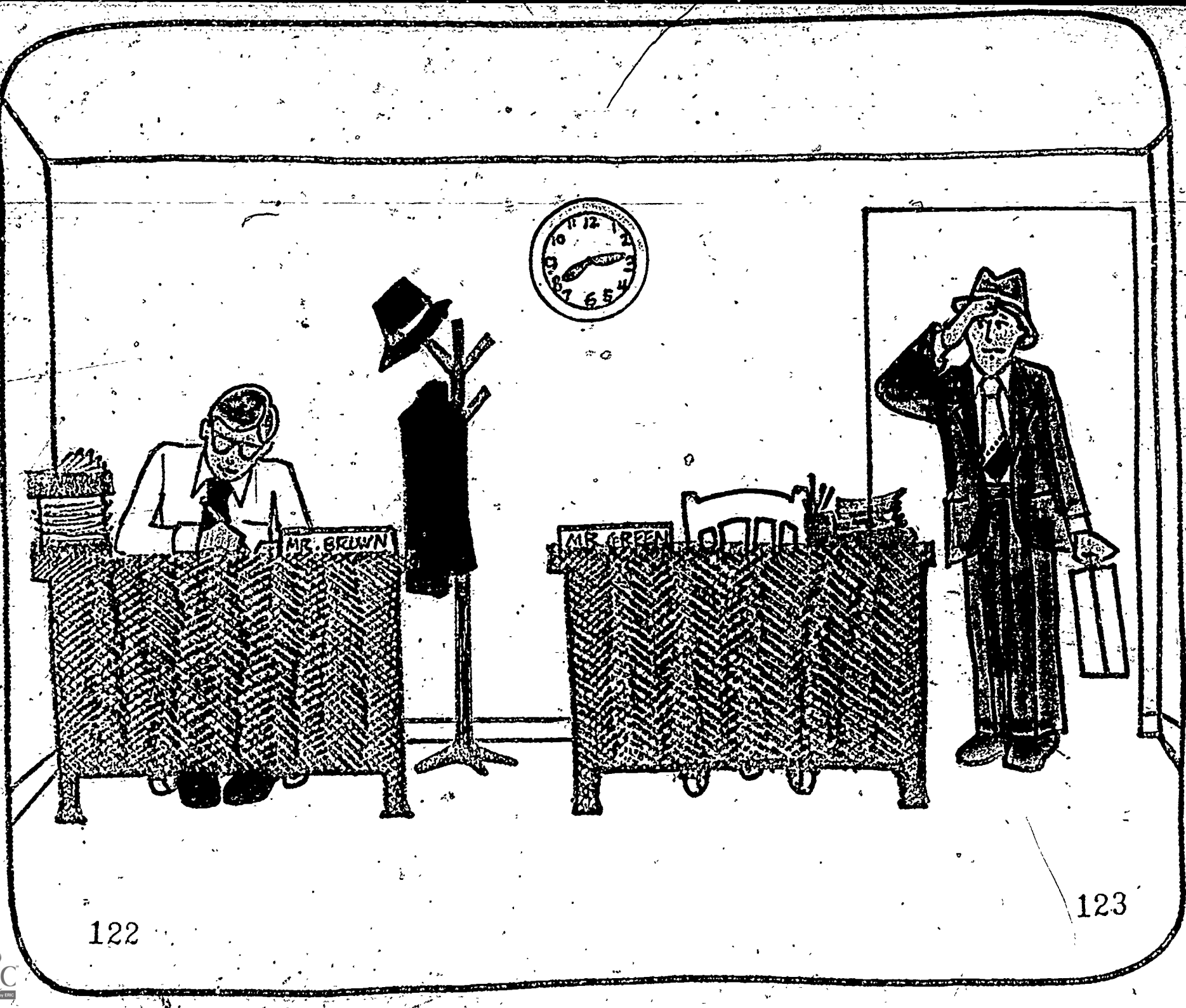
Picture 6A

Say THIS IS ANN (point to girl). SHE SET THE TABLE BEFORE DINNER. NOW SHE IS WATCHING TV AFTER DINNER. THIS IS BOB (point to boy). HE DID NOT CLEAR THE TABLE AFTER DINNER. HIS MOTHER WILL NOT LET HIM WATCH TV.

IS IT RIGHT FOR ANN TO WATCH TV (point to girl) BUT FOR BOB NOT TO WATCH TV (point to boy)?

WHY DO YOU THINK SO?

(Child responds--do not tell child whether correct or not)



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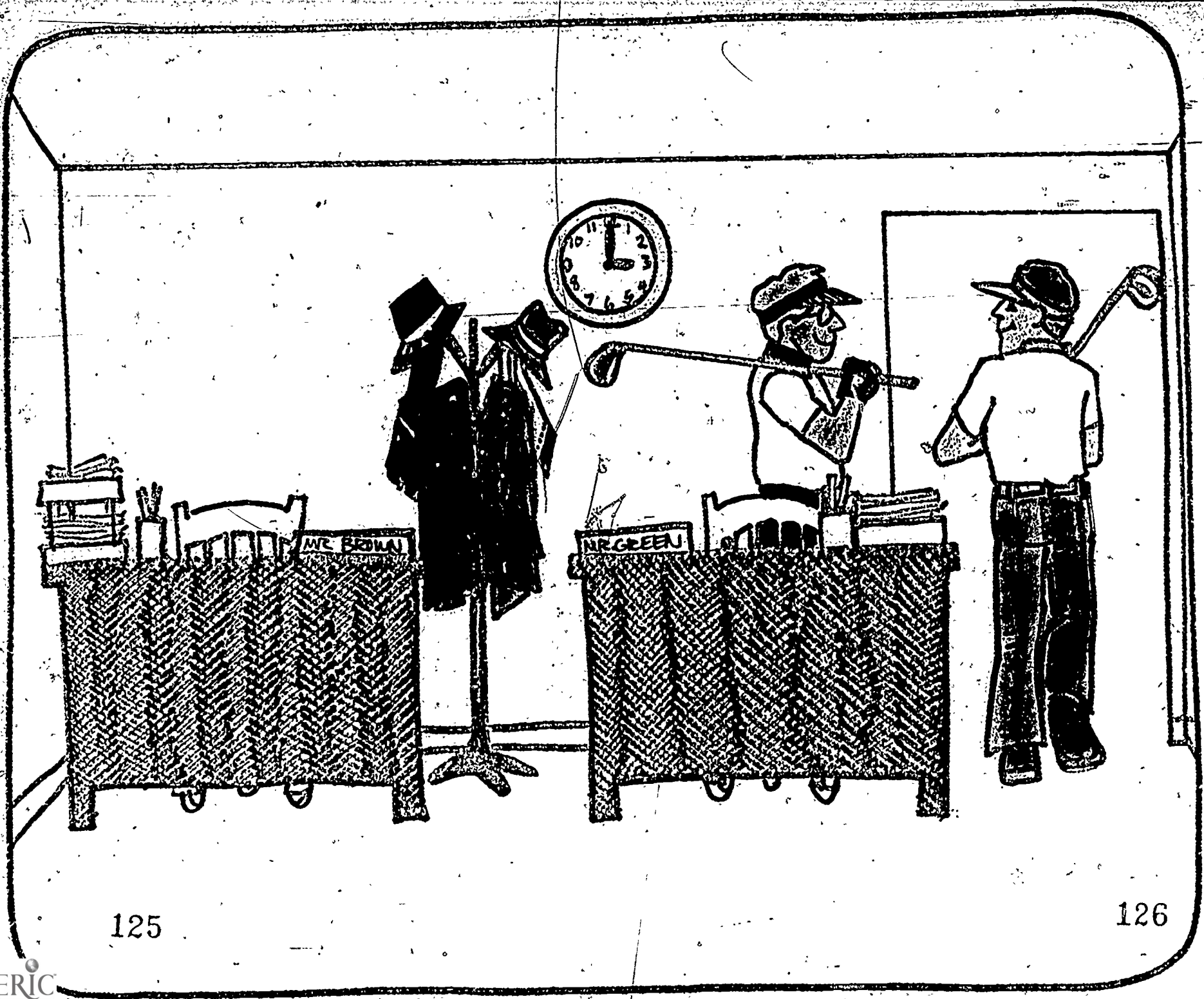
Picture 7

Say-MR. BROWN (point to man in brown) AND MR. GREEN (point to man in green) WORK IN THE SAME OFFICE. THEIR BOSS TOLD THEM IF THEY WERE ON TIME FOR WORK TODAY THEY COULD LEAVE WORK EARLY TO PLAY GOLF. MR. BROWN (point) WAS ON TIME TO WORK. MR. GREEN (point) WAS NOT.

WHAT WERE THESE TWO MEN SUPPOSED TO DO (point to the men)?
WHAT WOULD HAPPEN IF THEY WERE ON TIME TO WORK?
POINT TO THE MAN WHO WAS ON TIME FOR WORK.
POINT TO THE MAN WHO WAS NOT ON TIME FOR WORK.
(Child responds--correct if necessary)



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Picture 7A

Say MR. BROWN WAS ON TIME FOR WORK THIS MORNING (point to man in brown). HE IS GETTING OFF WORK EARLY TO PLAY GOLF (point to golf club in his hand). MR. GREEN (point to man in green) WAS LATE FOR WORK THIS MORNING. HE IS ALSO GETTING OFF WORK EARLY TO PLAY GOLF (point to golf club in his hand).

IS IT RIGHT FOR BOTH MR. BROWN AND MR. GREEN TO GET OFF WORK EARLY TO PLAY GOLF?

WHY DO YOU THINK SO?

(Child responds--do not tell child whether correct or not)

Picture 8

Say ALLEN AND FRED ARE FRIENDS WHO ARE SUPPOSED TO BE PICKING APPLES TO EARN MORE MONEY. THEY GET ONE DOLLAR FOR EVERY BASKET OF APPLES THEY PICK. ALLEN WORKS HARD AND PICKS FOUR BASKETS OF APPLES (point to boy picking apples). FRED DOESN'T PICK APPLES. INSTEAD, HE PLAYS WITH HIS DOG UNDERNEATH THE APPLE TREES (point to boy playing with dog).

WHAT ARE THE BOYS SUPPOSED TO BE DOING?
WHAT WILL THEY GET FOR EVERY BASKET OF APPLES THEY PICK? (point to one of the full baskets of apples)
WHICH ONE OF THE BOYS DID WHAT HE WAS SUPPOSED TO DO?
WHICH ONE OF THE BOYS DID NOT DO WHAT HE WAS SUPPOSED TO DO?
(Child responds--correct if necessary)

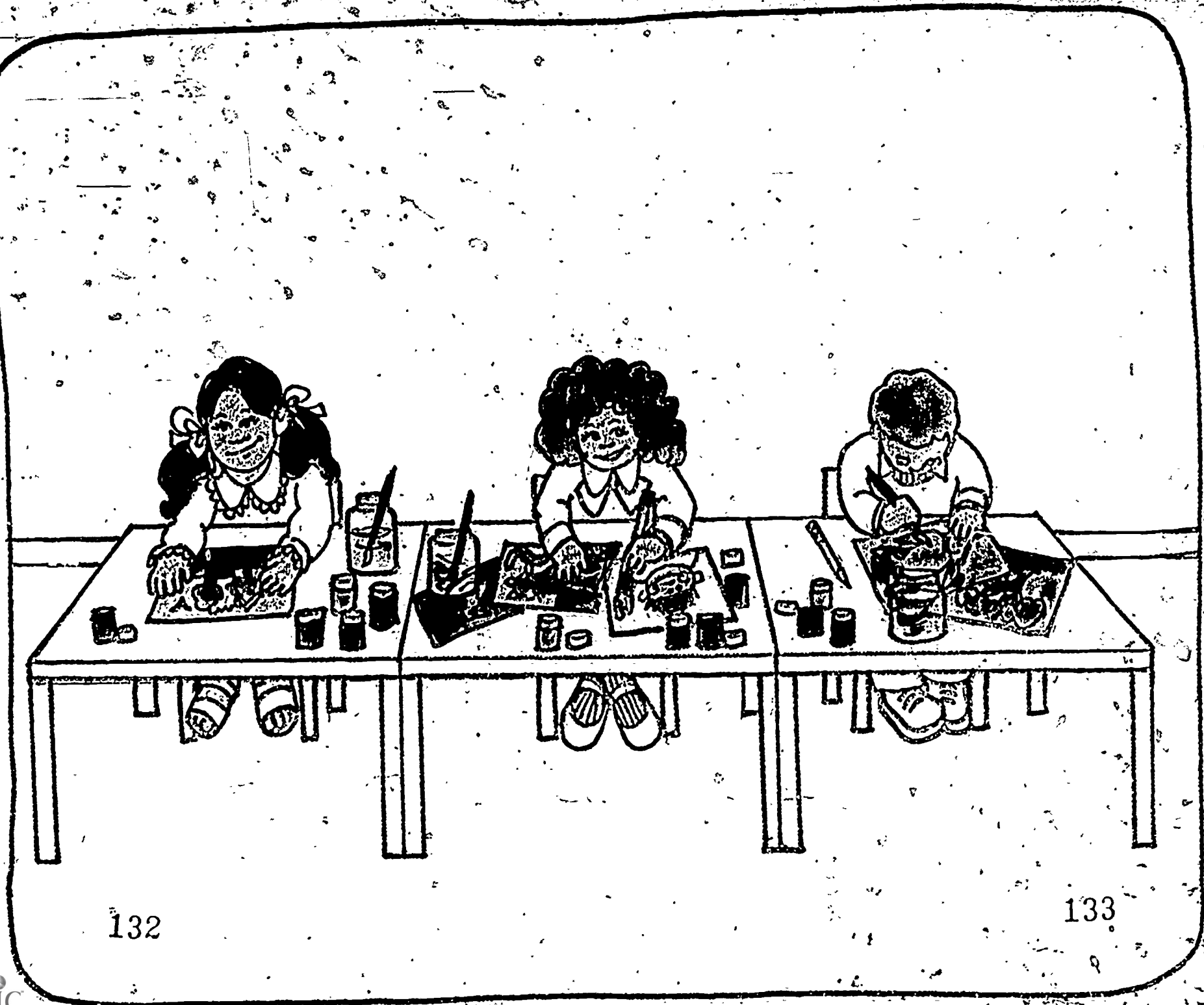
Picture 8A

Say ALLEN PICKED FOUR BASKETS OF APPLES. HE HAS FOUR DOLLARS IN HIS HANDS (point to boy with money in his hands). FRED DID NOT PICK ANY APPLES. HE DOES NOT HAVE ANY MONEY IN HIS HANDS (point to boy with no money in his hands).

IS THIS RIGHT FOR ALLEN (point to boy with money) TO HAVE SOME MONEY BUT FOR FRED (point to boy with no money) TO NOT HAVE SOME MONEY?

WHY DO YOU THINK SO?

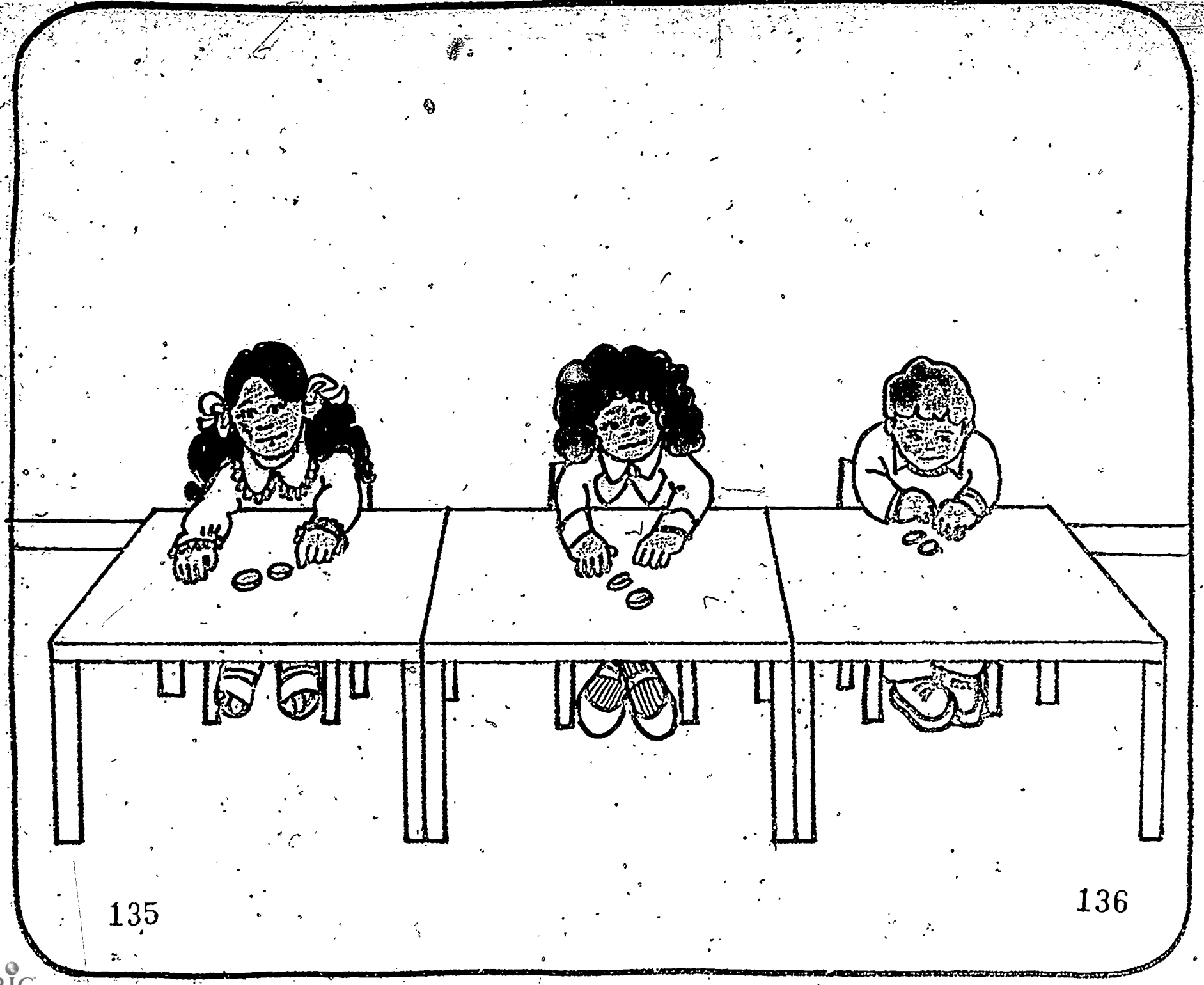
(Child responds--do not tell child whether correct or not)



Picture 9

Say THESE THREE CHILDREN IN THE SECOND GRADE MADE PICTURES TO SELL AT THE SCHOOL FAIR. THIS GIRL MADE 3 PICTURES TO SELL (point to girl with 3 pictures). THIS BOY MADE 2 PICTURES TO SELL (point to boy). THIS GIRL MADE ONLY 1 PICTURE TO SELL (point to girl with 1 picture). THEY SOLD THEIR PICTURES FOR A QUARTER EACH.

WHAT DID THESE CHILDREN DO?
HOW MUCH DID THEY SELL THEIR PICTURES FOR?
WHICH CHILD SOLD THE MOST PICTURES?
WHICH CHILD SOLD ONLY ONE PICTURE?
WHICH CHILD SOLD TWO PICTURES?
(Child responds--correct if necessary)



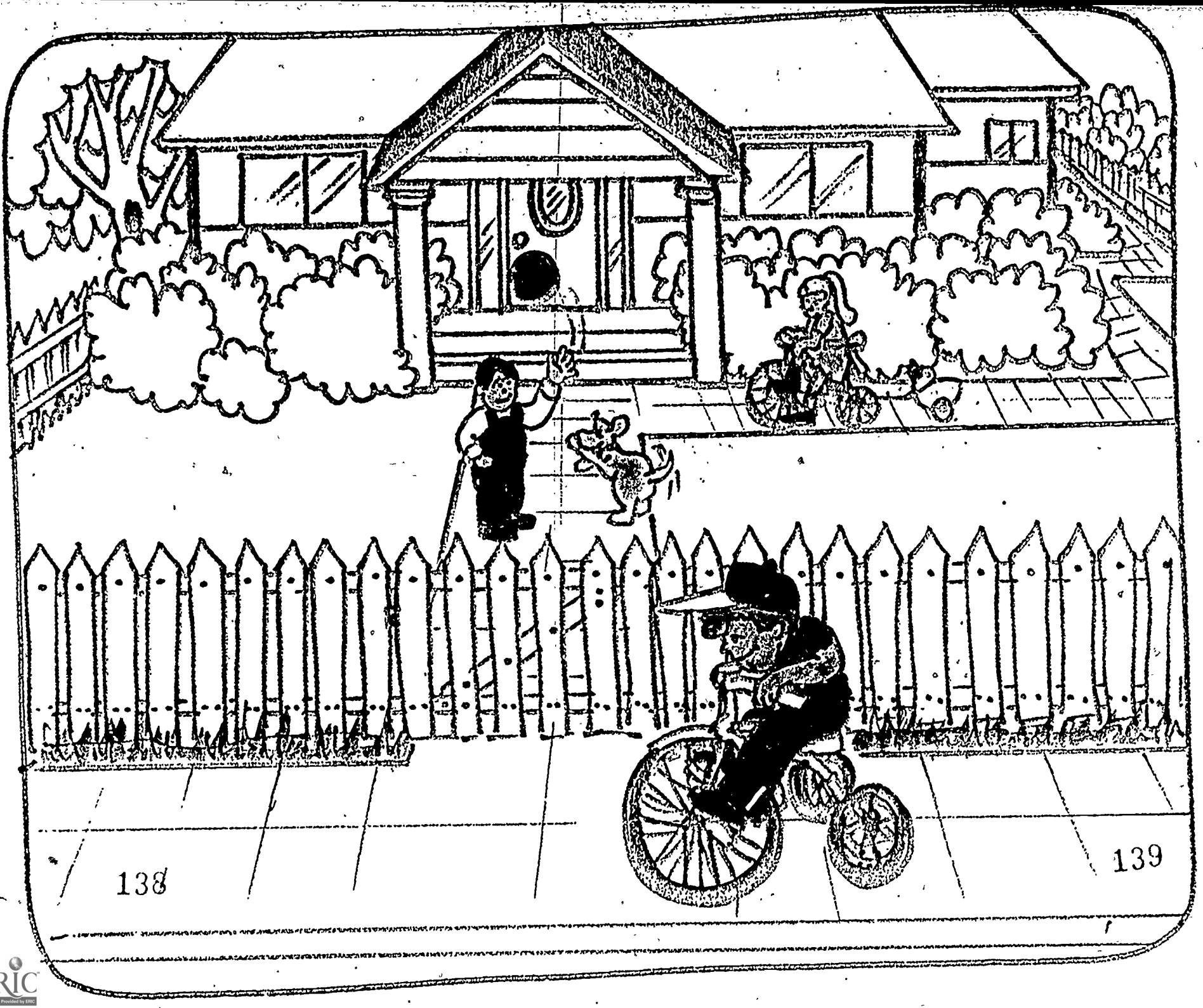
Picture 9A

Say THIS GIRL SOLD ALL 3 OF HER PICTURES (point to girl in the middle). SHE RECEIVED 2 QUARTERS. THIS BOY SOLD HIS TWO PICTURES (point to boy). HE RECEIVED TWO QUARTERS. THIS GIRL SOLD THE ONE PICTURE SHE MADE (point to girl on left). SHE RECEIVED 2 QUARTERS.

IS IT RIGHT FOR EACH OF THESE CHILDREN TO GET TWO QUARTERS FOR SELLING THEIR PICTURES?

WHY DO YOU THINK SO?

(Child responds--do not tell child whether correct or not)



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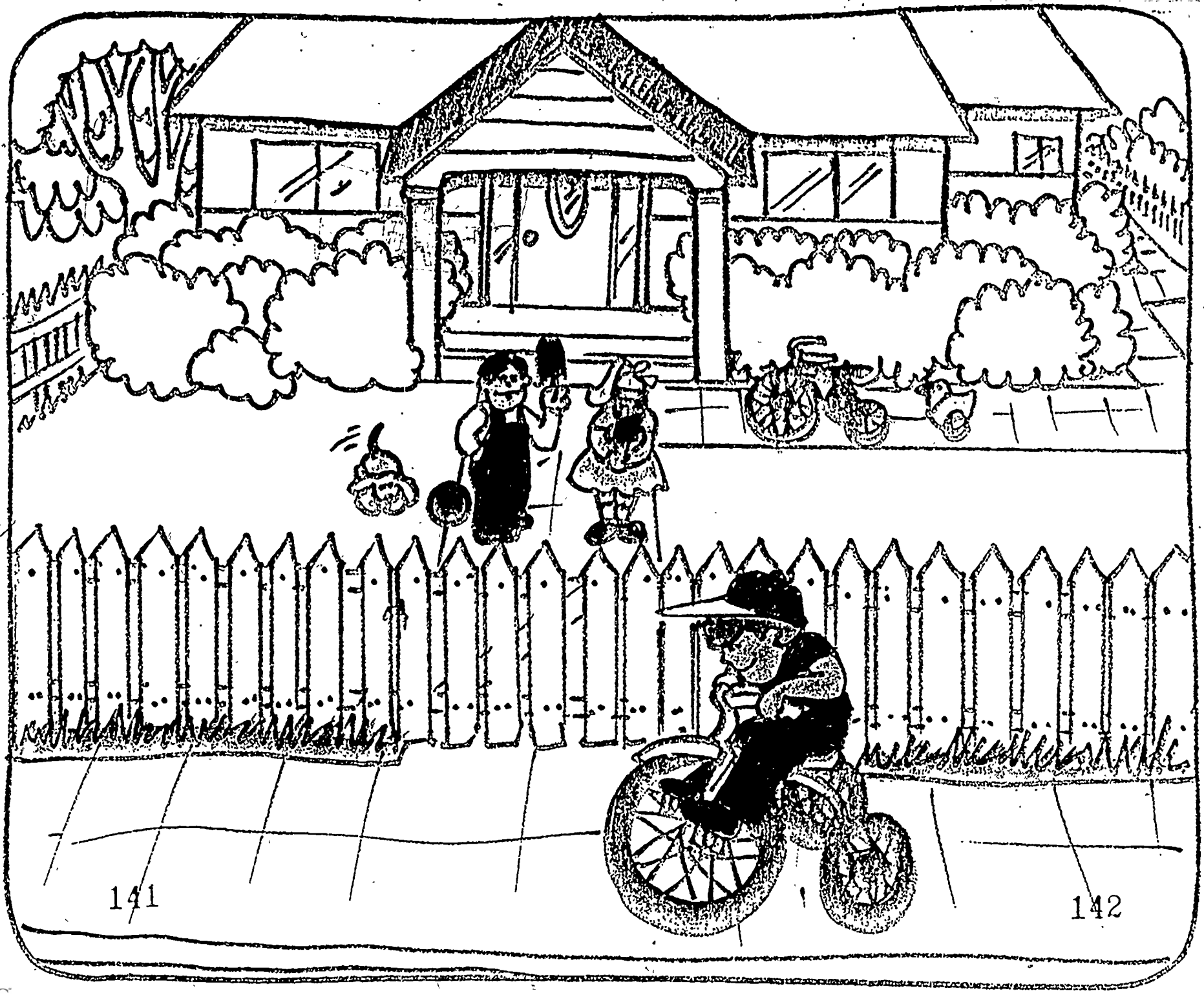
Picture 10

Say THESE THREE CHILDREN ARE BROTHERS AND SISTERS. EACH CHILD WHO STAYS IN THE YARD LIKE MOMMY SAID WILL GET AN ICE CREAM CONE FOR A TREAT. THESE TWO CHILDREN STAYED IN THE YARD (point to children in the yard). THIS CHILD PLAYED OUTSIDE THE YARD (point to child on tricycle outside the fence).

WHAT ARE THESE CHILDREN SUPPOSED TO DO?
WHAT WILL THEY GET IF THEY STAY IN THE YARD?
WHO STAYED IN THE YARD?
WHO DID NOT STAY IN THE YARD?
(Child responds--correct if necessary)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Picture 10A

Say THESE CHILDREN (point to children inside the fence) STAYED IN THE YARD. THEY ARE EATING ICE CREAM CONES. THIS CHILD WENT OUTSIDE THE YARD (point to child on tricycle outside the fence). HE DOES NOT HAVE AN ICE CREAM CONE.

IS IT RIGHT FOR THESE CHILDREN (point to children eating ice cream cones) TO HAVE ICE CREAM CONES BUT NOT THIS CHILD (point to child outside the fence)?

WHY DO YOU THINK SO?

(Child responds--do not tell child whether correct or not)

NARRATION FOR BEHAVIORAL TEST

Phase 1

Say NOW WE'RE GOING TO PLAY A GAME WHERE YOU FIND OUT IF YOU CAN DRAW SOMETHING FASTER AND DO MORE PICTURES THAN ANOTHER CHILD I'LL TELL YOU ABOUT LATER.

Show child an uncompleted dot-to-dot clown picture.

CAN YOU SEE THE NUMBERS ON THIS PICTURE? I WANT YOU TO DRAW A LINE FROM ONE NUMBER TO ANOTHER, STARTING WITH ONE AND GOING TO TWO, THEN ON TO THREE, THEN FOUR, AND SO ON UNTIL THE PICTURE IS FINISHED.

Use your finger to go from one number to another as you name the first four numbers.

I'LL HELP YOU FIND THE NUMBERS IF YOU LIKE. HERE IS A CRAYON SO YOU CAN DRAW THE LINES.

Hand child a crayon.

WAIT UNTIL I TELL YOU TO START. GO AS FAST AS YOU CAN BECAUSE I WANT TO SEE HOW MANY PICTURES YOU CAN DRAW BEFORE I CALL TIME. WHEN YOU ARE FINISHED YOUR PICTURE WILL LOOK SOMETHING LIKE THIS ONE.

Show child the completed version of the clown dot-to-dot picture (Picture A)

IF THERE IS STILL TIME LEFT YOU CAN ALSO DO THIS PICTURE.

Show an uncompleted umbrella dot-to-dot picture (Picture B).

ARE YOU READY? BEGIN.

The child draws from numeral to numeral, with your help if necessary, as fast as he/she can without rushing. Give help, if necessary, and also verbal encouragement as needed. As soon as the child finishes the clown picture say

YOU'RE DOING VERY WELL. THERE'S STILL TIME LEFT SO HERE'S ANOTHER PICTURE FOR YOU TO DRAW.

Hand the child an uncompleted umbrella dot-to-dot picture. Say

KEEP WORKING AS FAST AS YOU CAN.

Continue to give encouragement, also help if necessary. As soon as the child completes the umbrella picture say TIME. Write the child's first name on each drawing s/he completed. Say

NOW LET'S PUT YOUR PICTURES RIGHT HERE IN FRONT OF YOU.

Put child's pictures directly in front of him/her. Put Pictures 1, 2, and 3 directly above the child's completed pictures.

HERE ARE THE PICTURES ANOTHER CHILD YOUR AGE MADE IN THE SAME AMOUNT OF TIME YOU MADE YOURS. HOW MANY PICTURES DID THIS OTHER CHILD MAKE?

Child responds. Correct if necessary.

I HAVE SOME PRIZES HERE.

Show the child 6 itsy-bitsies.

I NEED YOU TO HELP ME DECIDE HOW TO DIVIDE THESE PRIZES.

Hand the prizes to the child.

YOU DECIDE HOW MUCH PRIZE THIS OTHER CHILD SHOULD HAVE. THEN DECIDE HOW MUCH PRIZE YOU SHOULD HAVE. PUT IN MY HAND HOW MUCH PRIZE YOU THINK THIS OTHER CHILD SHOULD HAVE FOR THE PICTURES.

Child decides and hands you the prize for the "other child."

TELL ME WHY THE PRIZE SHOULD BE DIVIDED THIS WAY.

Write on record form how many itsy-bitsies the child gave himself/herself and the "other" and the reason why. If any were left over indicate how many. Tell child to put his/her prize and completed dot-to-dot pictures aside and that you will give them to the teacher to give to the child when he/she goes home today. Then go on to the next phase of the behavioral test.

Phase 2

NOW I NEED YOUR HELP DECIDING HOW TO DIVIDE THESE SAME KINDS OF PRIZES BETWEEN TWO OTHER CHILDREN WHO DID THE SAME KIND OF THING YOU DID. HERE IS A PICTURE A CHILD YOUR AGE DREW.

Put Picture 4 directly in front of the child.

NOW HERE ARE TWO MORE PICTURES ANOTHER CHILD THE SAME AGE DREW IN THE SAME AMOUNT OF TIME.

Put Pictures 5 and 6 above or below Picture 4.

HERE ARE THE PRIZES.

Hand the child 6 itsy-bitsies.

PUT ON THIS PICTURE (point to Picture 4) HOW MUCH PRIZE THIS CHILD SHOULD GET FOR DRAWING ONE PICTURE.

Child places prize on Picture 4.

NOW PUT ON THESE PICTURES HOW MUCH PRIZE THIS CHILD SHOULD GET FOR DRAWING TWO PICTURES (point to Pictures 5 and 6).

Child places prize on Pictures 5 and 6. Record how many itsy-bitsies were given to the child with one picture and to the child with two pictures. Indicate if any were left over.

TELL ME WHY THE PRIZE SHOULD BE DIVIDED THIS WAY.

Record the child's answer on the record form. Thank the child for being such a good game player. Remind the child that you will give the teacher the child's two drawings and prize(s) so s/he can have them when s/he goes home. Take the child back to the classroom.

Picture A

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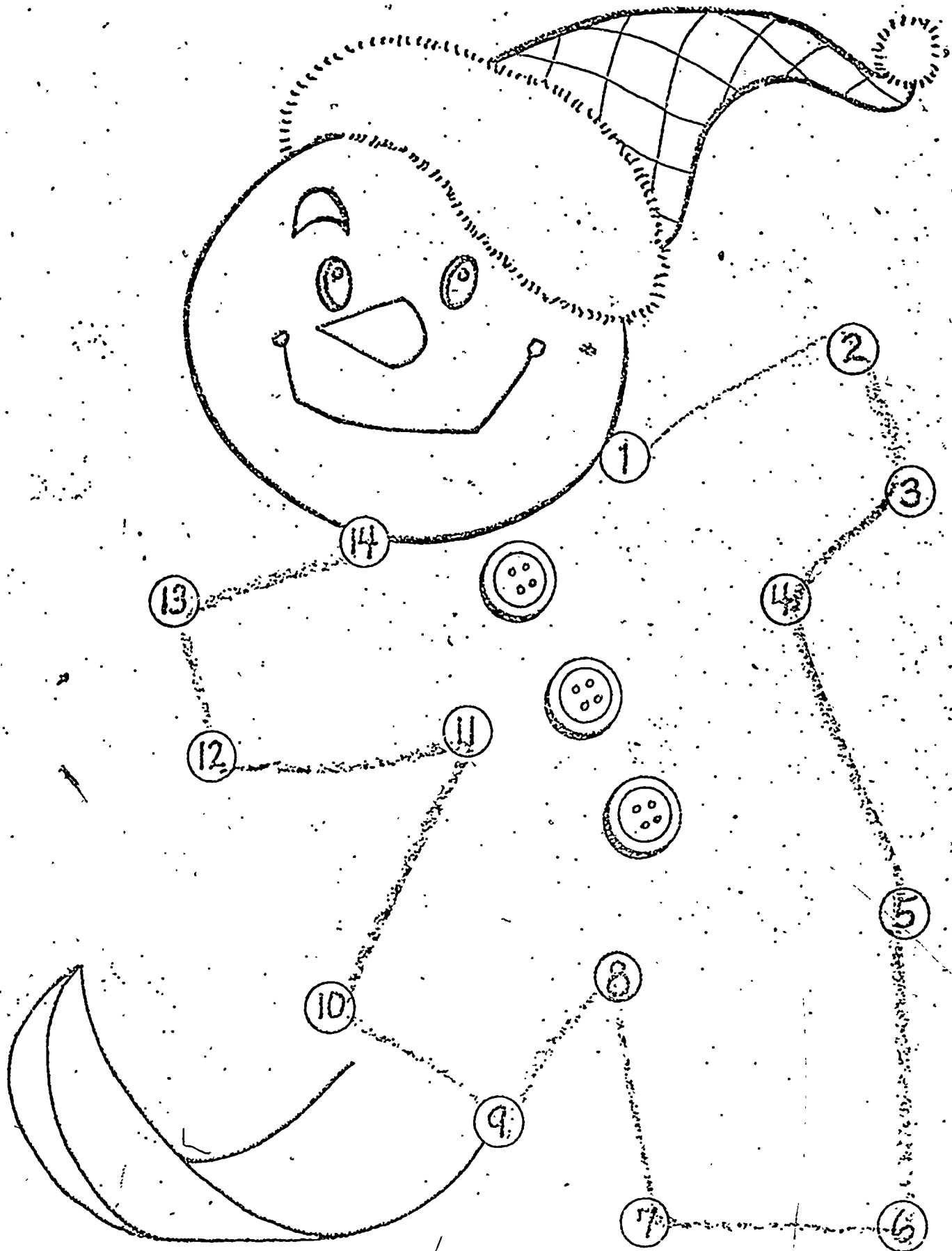
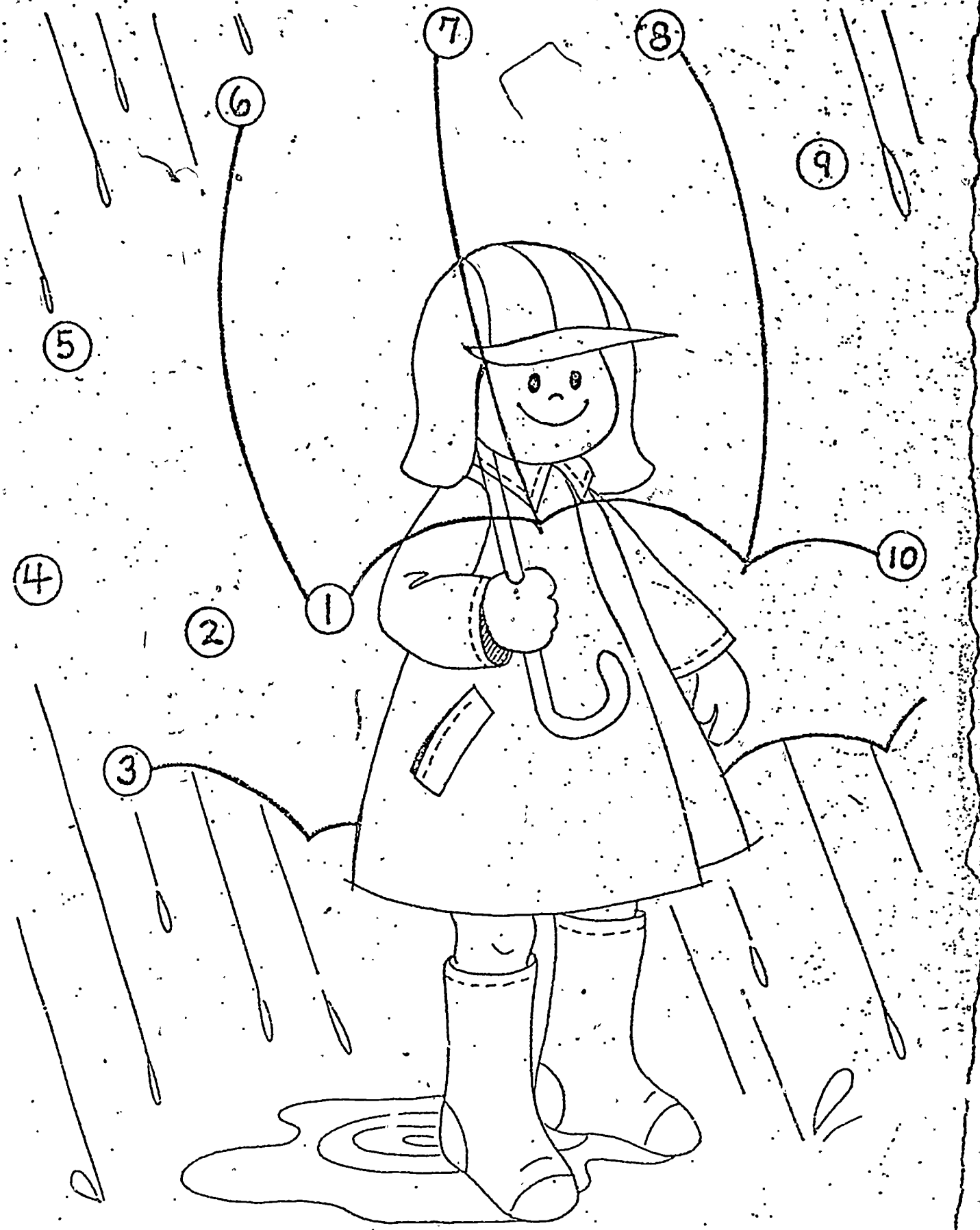
Ph. 1

Phase 1

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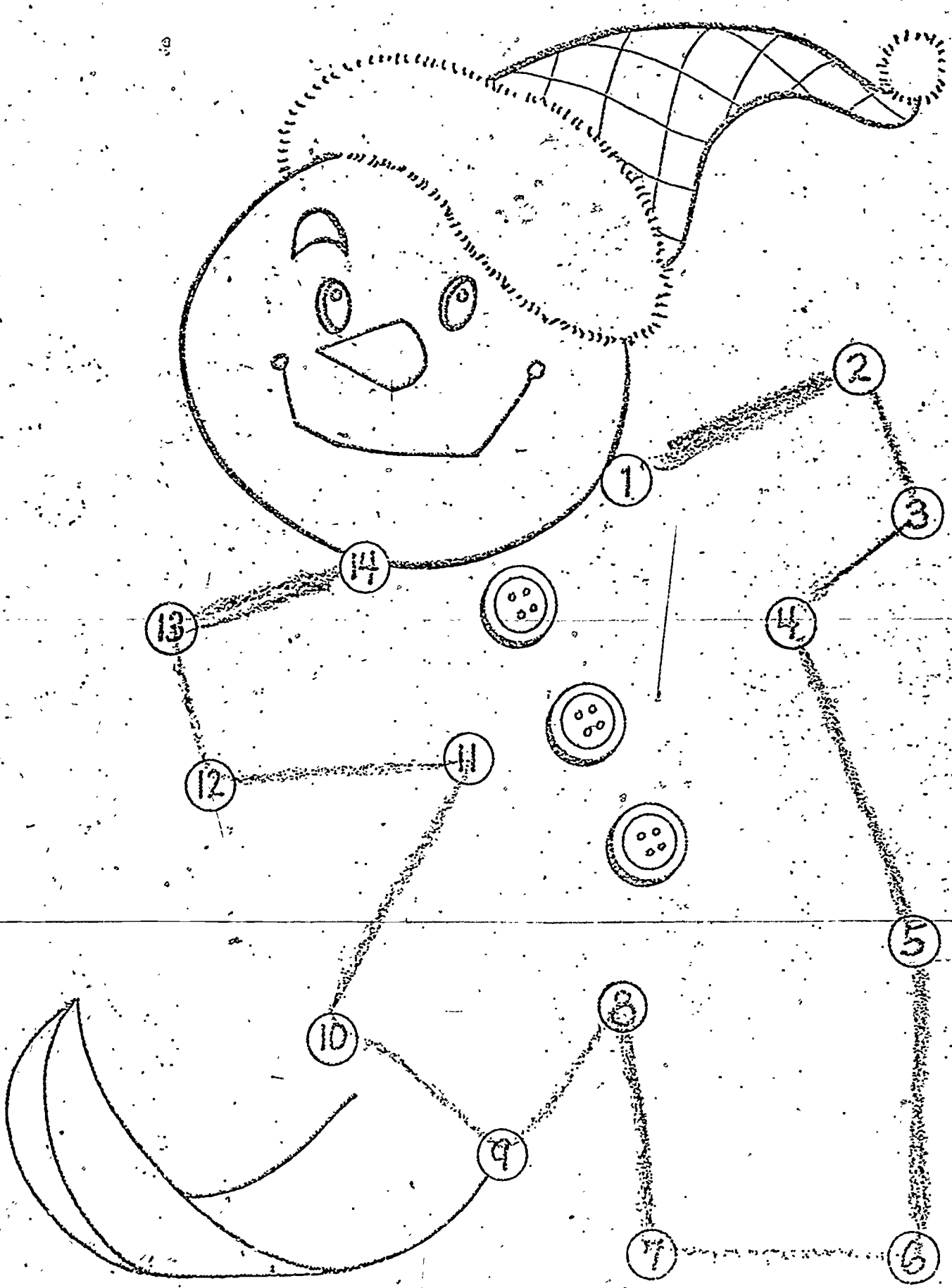
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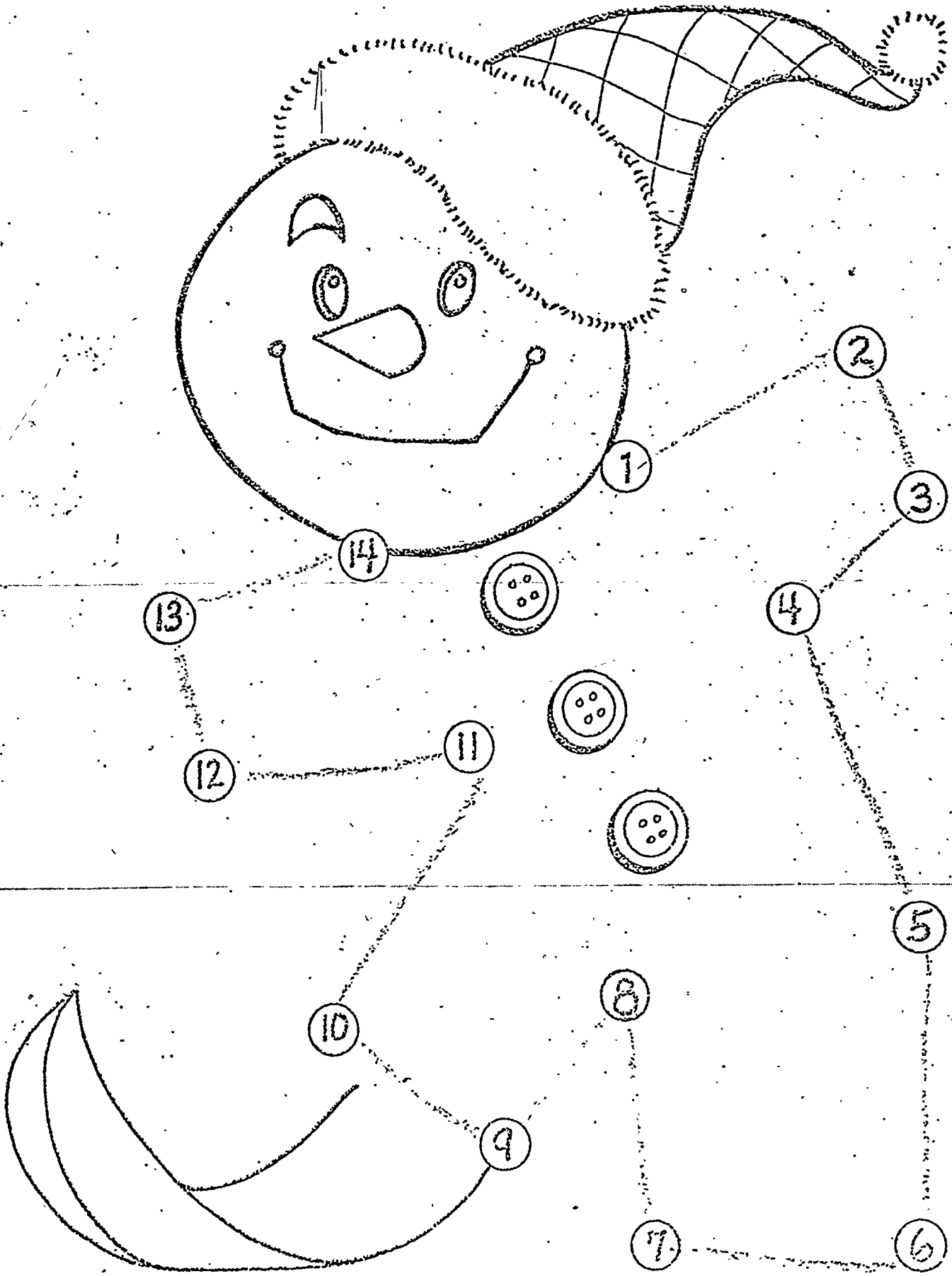
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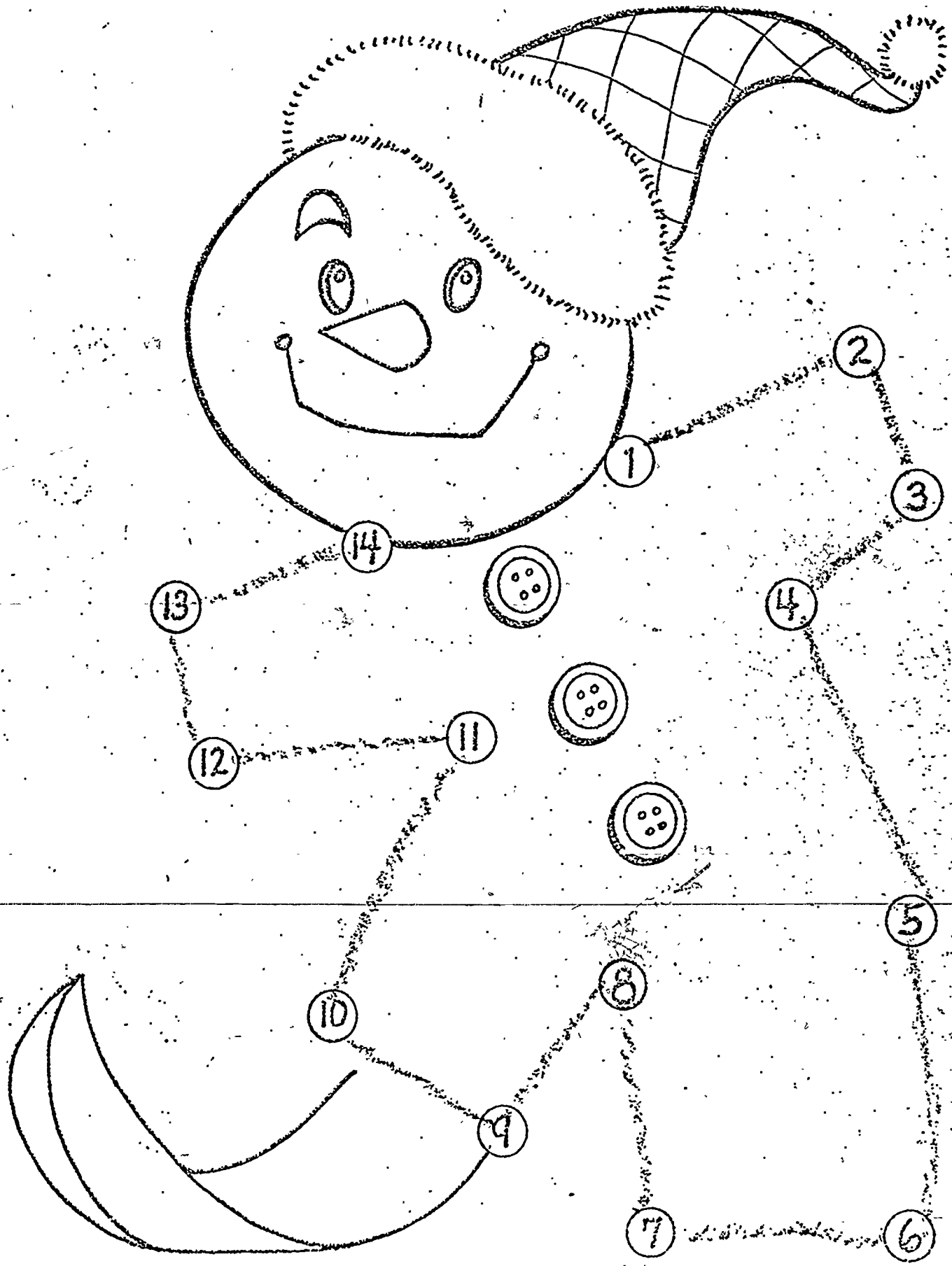
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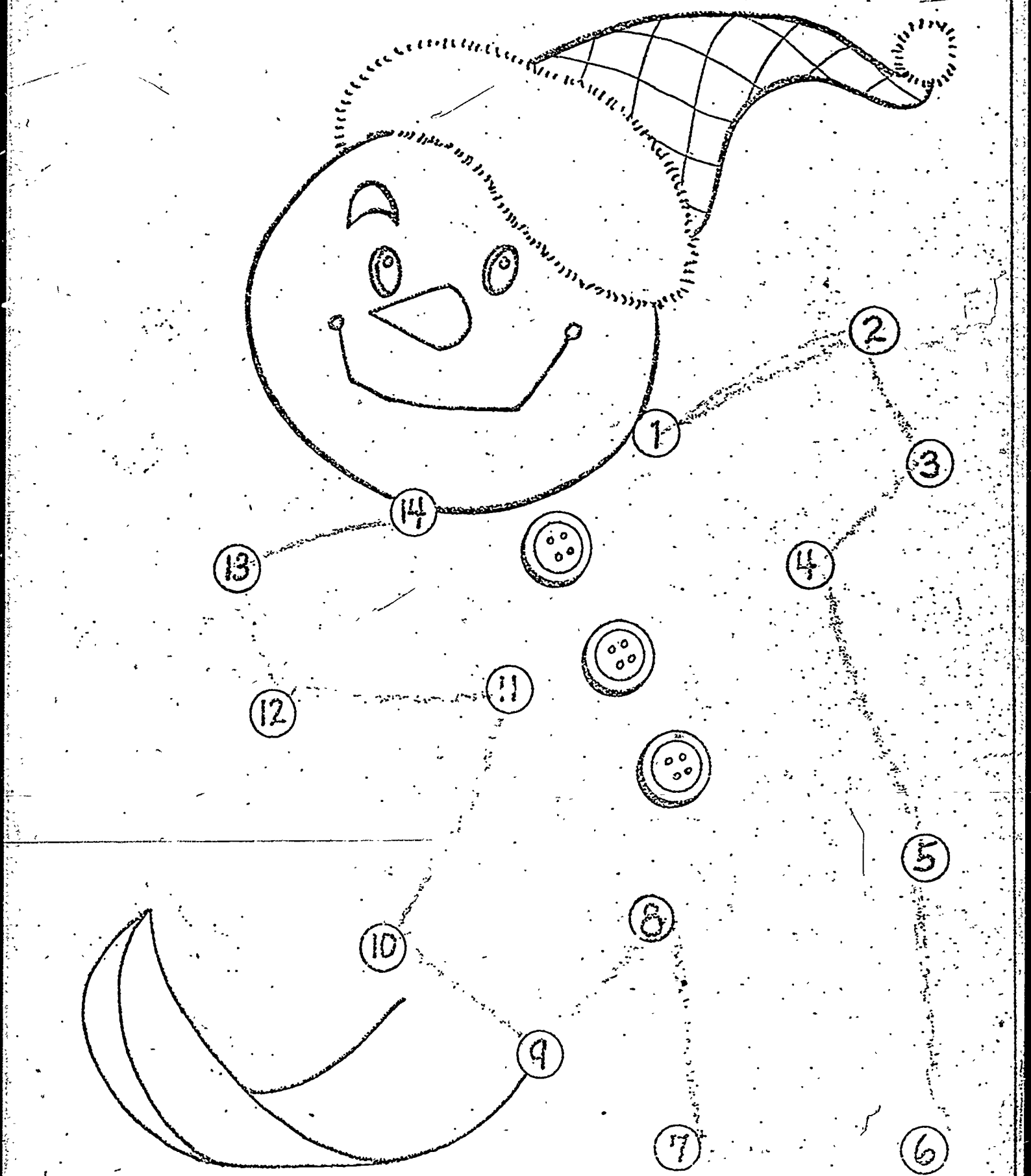
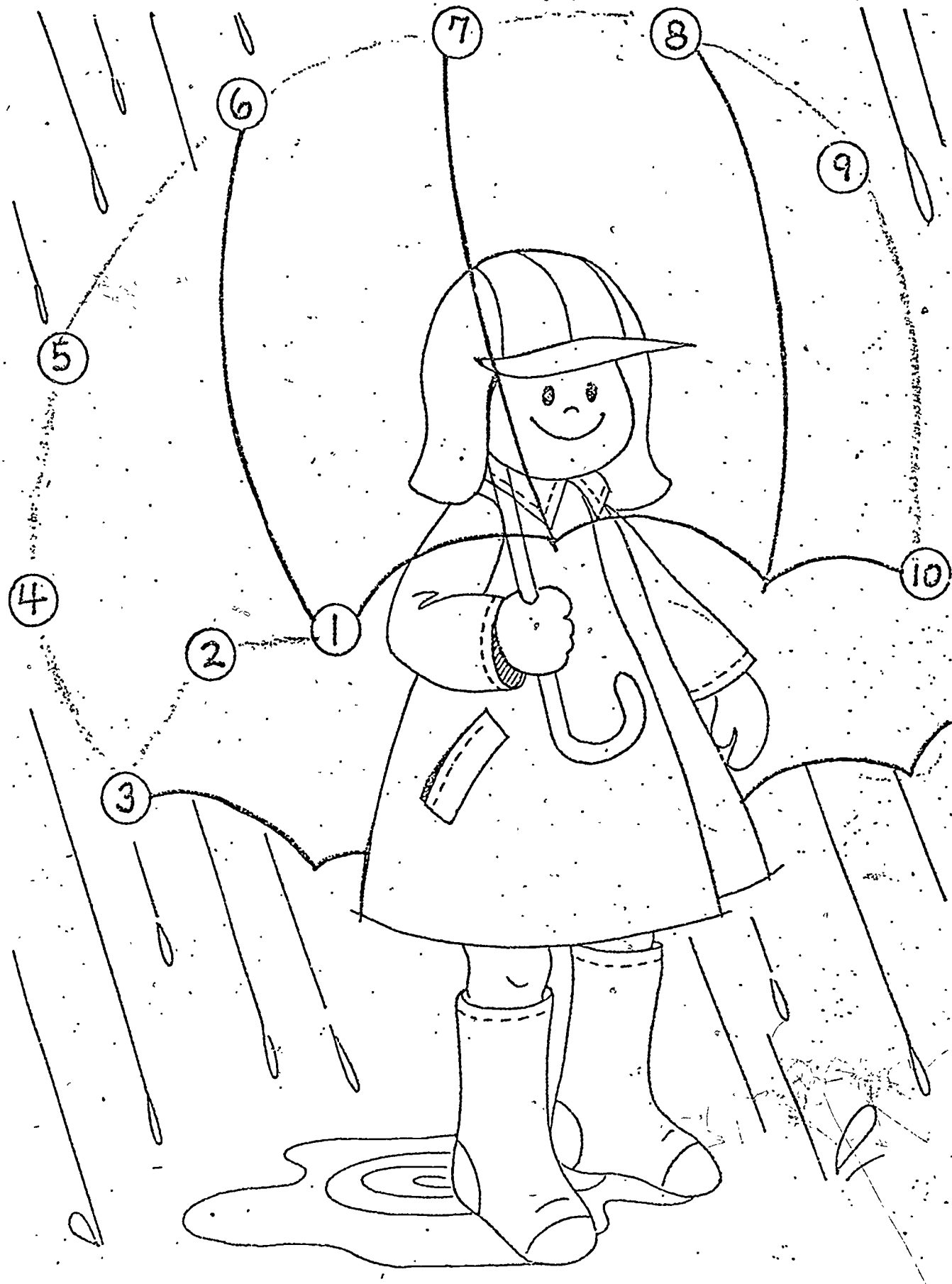
Phase 2



Phase 2



APPENDIX E

Lesson 1

FAIR DISTRIBUTION OF REWARDS

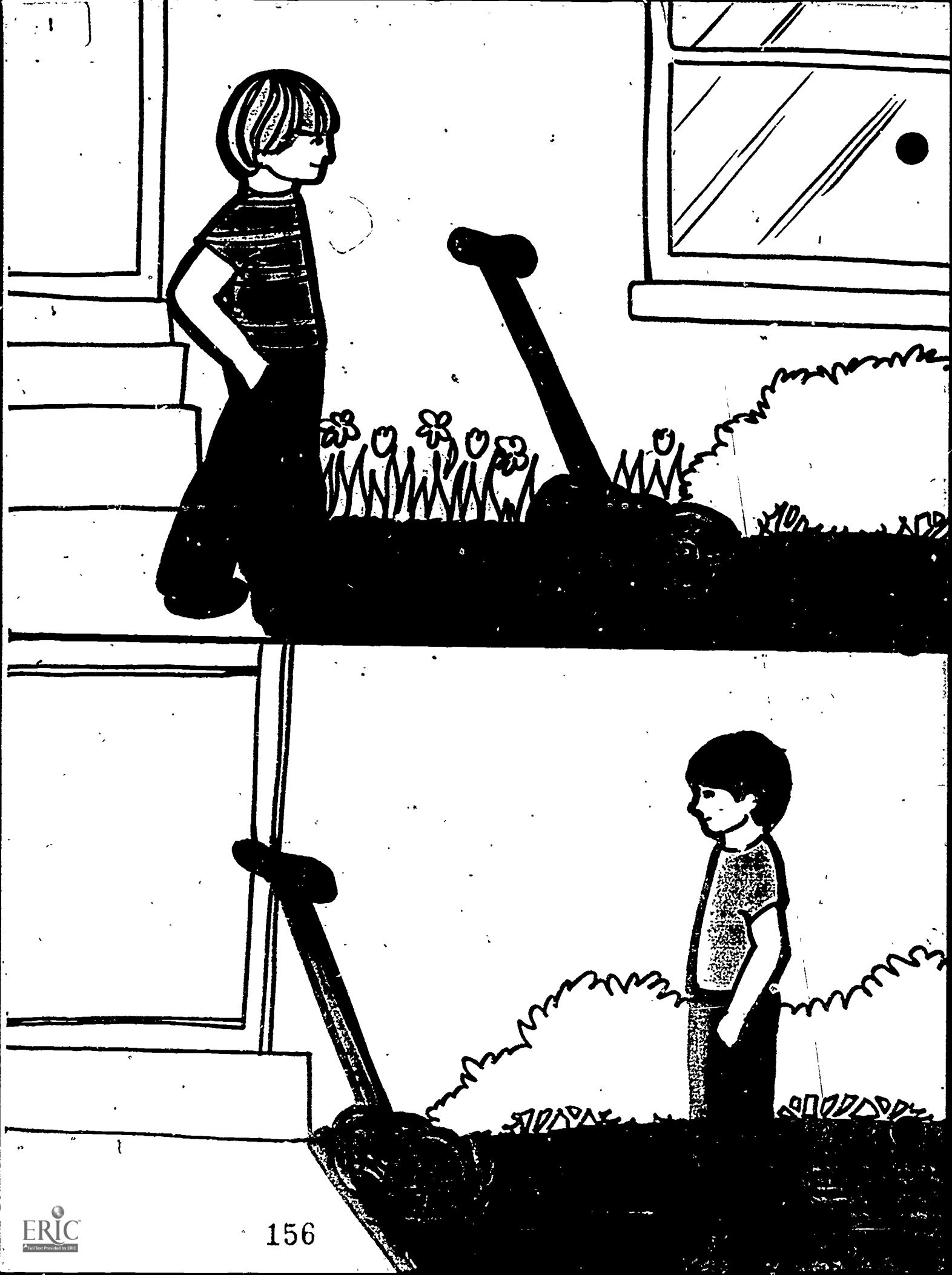
Instructional Program on Equity

for Prekindergarten Children

Script: Barbara Vance
Illustrations: Lori Anderson

for

Communications Research Center
College of Fine Arts & Communications
Brigham Young University
June 1977



EXAMPLES

Introduction

HERE ARE SOME PICTURES I WANT TO TELL YOU ABOUT. LOOK AT THE PICTURES AND LISTEN VERY CAREFULLY TO WHAT I SAY BECAUSE I'M GOING TO ASK YOU SOME QUESTIONS ABOUT EACH PICTURE. ARE YOU READY FOR THE FIRST PICTURE? HERE WE GO.

Show Picture No. 1

THESE TWO BOYS ARE BROTHERS. THIS ONE (point to boy in top half) IS THE OLDER BROTHER. THIS BOY (point to boy in bottom half) IS THE YOUNGER BROTHER. THIS BOY (point to top half) IS SUPPOSED TO MOW THE FRONT LAWN. THIS BOY (point to bottom half) IS SUPPOSED TO MOW THE BACK LAWN. EACH BOY GETS ONE DOLLAR IF HE MOWS THE LAWN. THIS BOY (point to top half) DID NOT MOW THE LAWN. THIS BOY (point to bottom half) DID MOW THE LAWN.

(Point to a child) WHAT ARE THESE BOYS SUPPOSED TO BE DOING?

(Child responds)

If correct: YES. THEY'RE SUPPOSED TO MOW THE LAWN.
If incorrect: NO. THEY'RE SUPPOSED TO MOW THE LAWN. WHAT ARE THEY SUPPOSED TO DO? (Child responds; reinforce).

(Point to another child) WHAT WILL EACH BOY GET IF HE DOES HIS JOB?

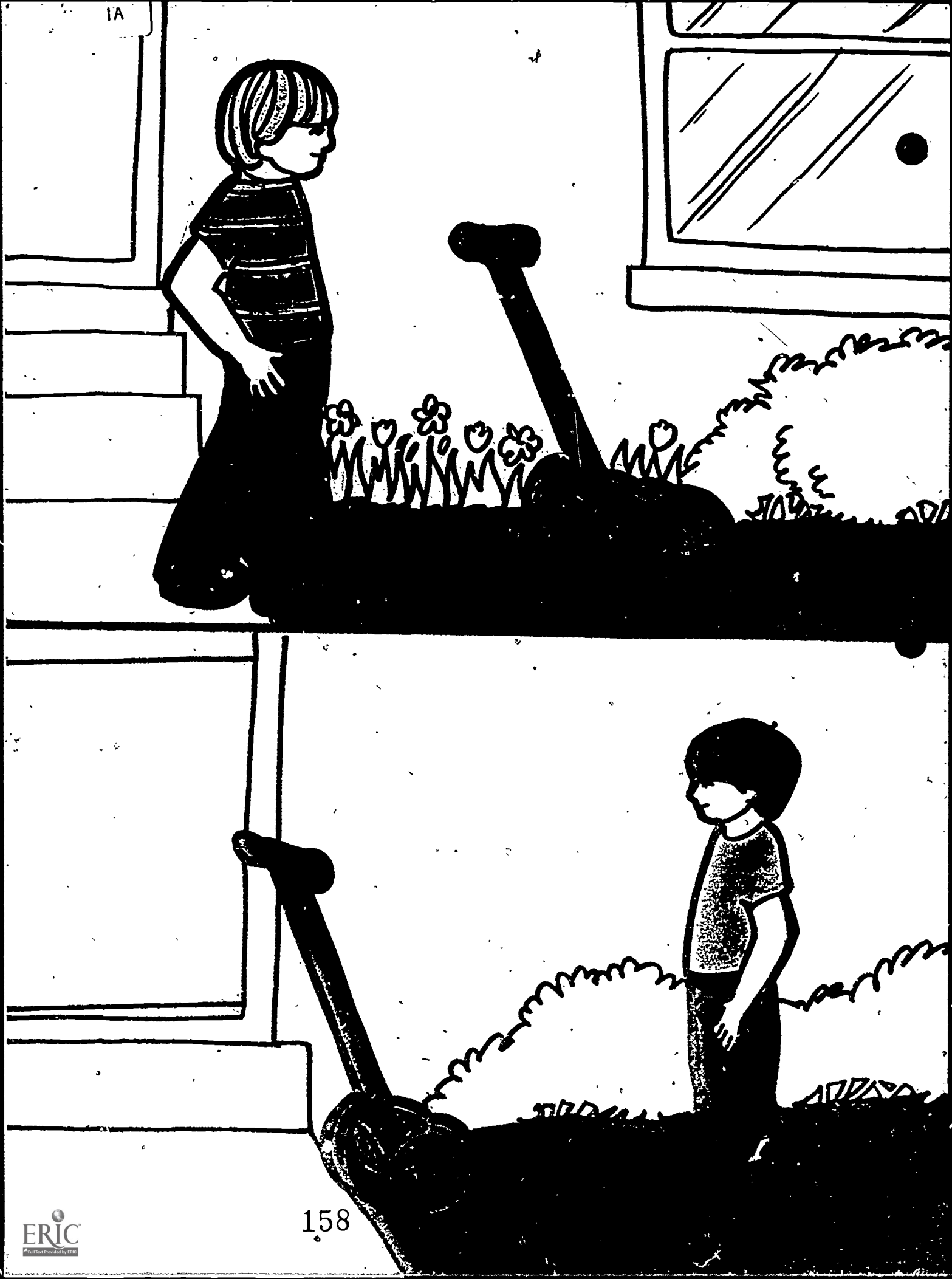
(Child responds)

If correct: YES, HE WILL GET ONE DOLLAR.
If incorrect: NO, HE WILL GET ONE DOLLAR. WHAT WILL HE GET? (Child responds; reinforce)

(Point to another child) ONLY ONE BOY DID WHAT HE WAS SUPPOSED TO DO. POINT TO THE BOY WHO MOWED THE LAWN.

(Child responds)

If correct: YES, THIS BOY (point to lower half) MOWED THE LAWN AND THIS BOY (point to top half) DID NOT MOW THE LAWN.
If incorrect: NO, THIS BOY (point to lower half) MOWED THE LAWN AND THIS BOY (point to top half) DID NOT MOW THE LAWN. NOW, SHOW ME WHICH BOY MOWED THE LAWN. (Child responds; reinforce)



Show Picture No. 1A

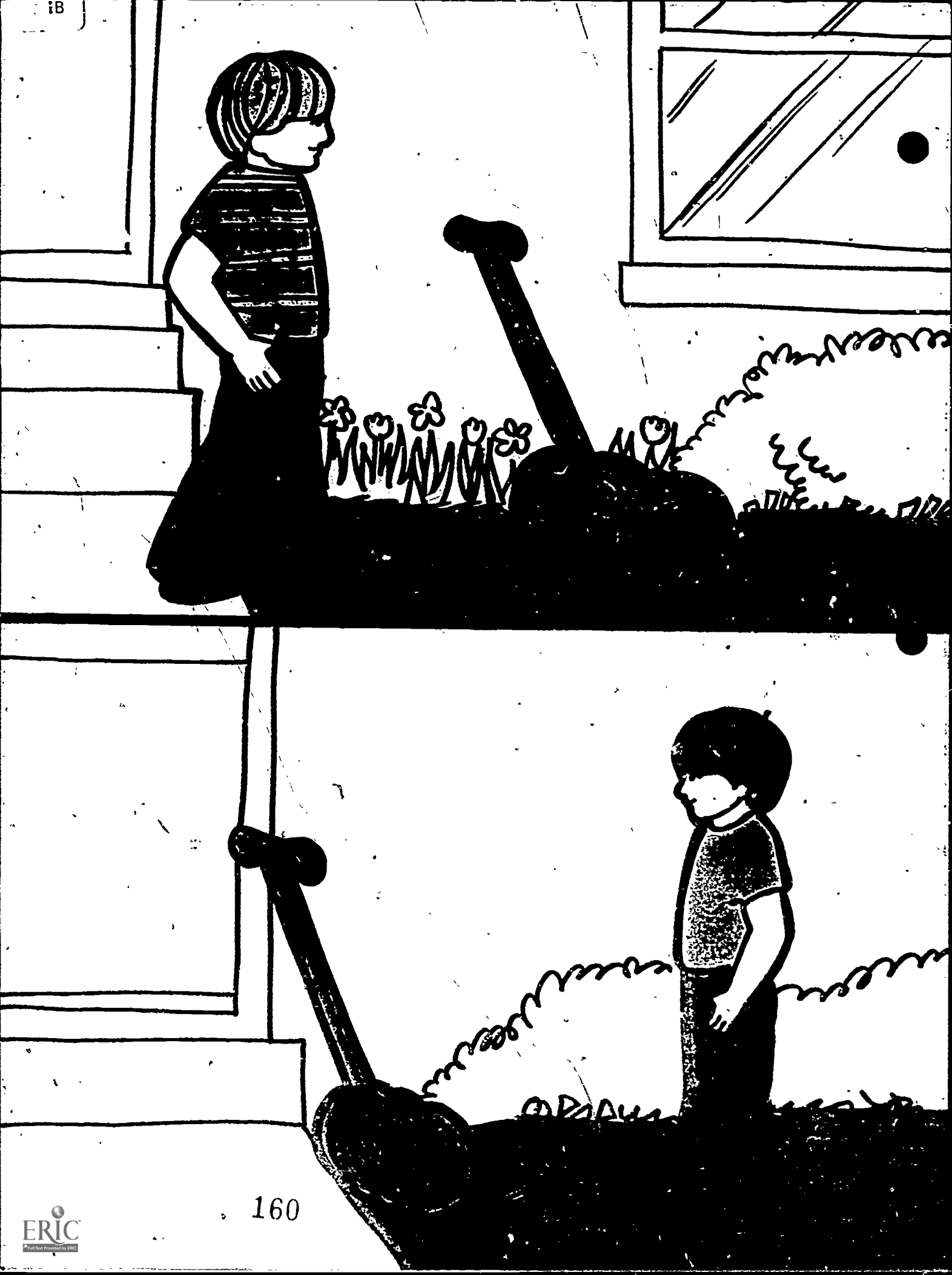
(Point to boy in top half) THIS BOY DID NOT MOW THE LAWN SO HE DOESN'T GET ANY MONEY. THIS BOY (point to boy in lower half) DID MOW THE LAWN SO IT IS RIGHT THAT HE SHOULD HAVE ONE DOLLAR.

(Point to a child) TELL ME WHY THIS BOY (point lower half) HAS ONE DOLLAR BUT THIS BOY (point top half) HAS NO MONEY.

(Child responds)

If correct: YES, THIS BOY (point lower half) MOWED THE LAWN BUT THIS BOY (point to top half) DID NOT.

If incorrect: NO, THIS BOY (point to lower half) MOWED THE LAWN BUT THIS BOY (point to top half) DID NOT. NOW TELL ME WHY THIS BOY (point to lower half) HAS ONE DOLLAR BUT THIS BOY (point to top half) HAS NO MONEY. (Child responds; reinforce)



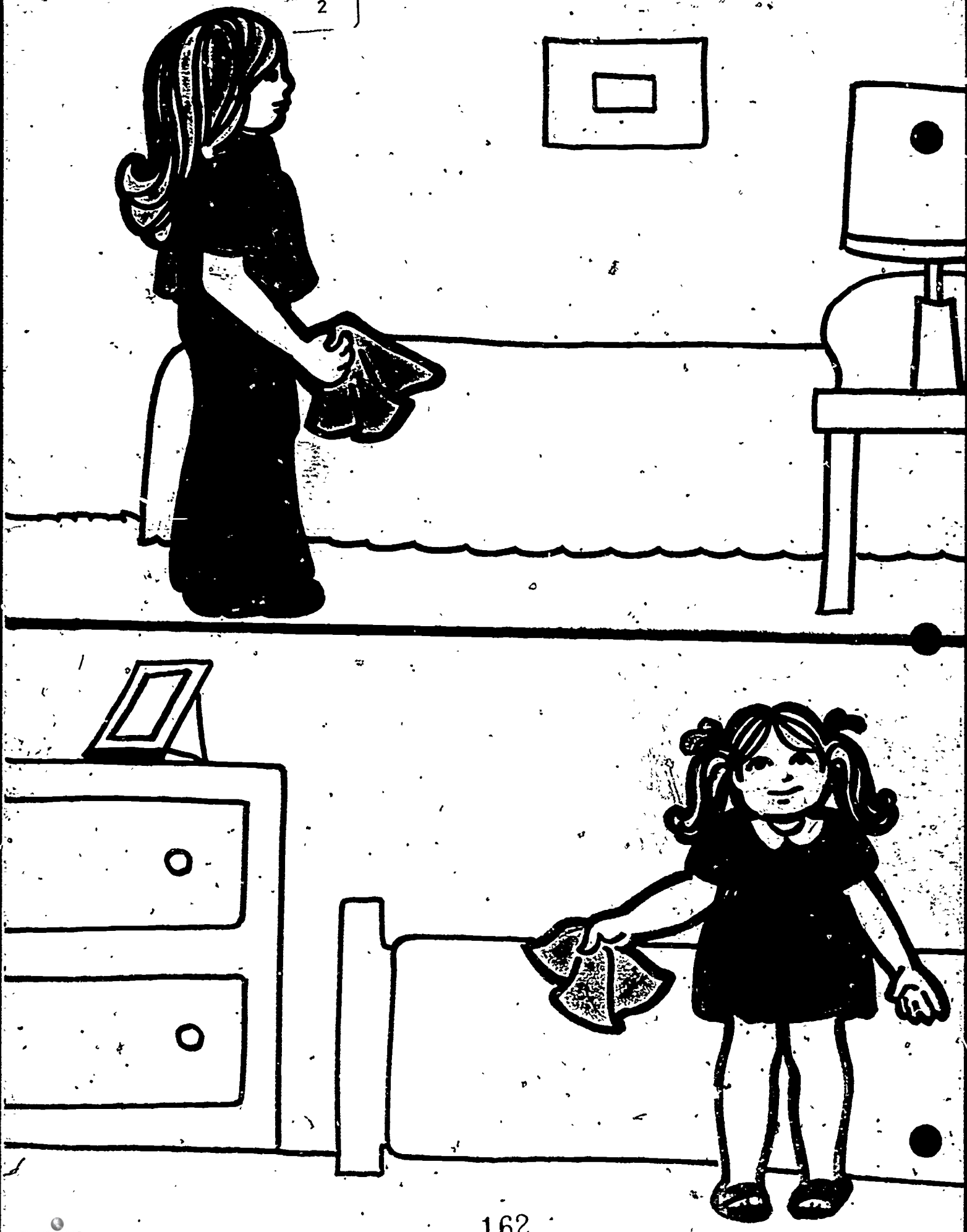
Show Picture No. 1B

NOW PRETEND THAT THIS BOY (point to top half) GOT ONE DOLLAR EVEN THOUGH HE DIDN'T MOW THE LAWN AND THIS BOY (point to lower half) DIDN'T GET ANY MONEY EVEN THOUGH HE DID MOW THE LAWN. THAT ISN'T RIGHT. THE ONE WHO DID HIS JOB SHOULD GET THE MONEY (point to lower half). TELL ME WHY THIS BOY (point to top half) SHOULD NOT HAVE THIS MONEY.

(Child responds)

If correct: THAT'S CORRECT. HE DIDN'T MOW THE LAWN SO HE SHOULDN'T HAVE THE MONEY. THIS BOY (point to lower half) SHOULD HAVE THE MONEY.

If incorrect: NO. HE DIDN'T MOW THE LAWN SO HE SHOULDN'T HAVE THE MONEY. THIS BOY (point to lower half) SHOULD HAVE THE MONEY. NOW TELL ME WHY HE (point to top half) SHOULDN'T HAVE THE MONEY. (Child responds; reinforce)



Show Picture No. 2

THESE TWO GIRLS ARE SISTERS. THIS GIRL (point to top half) IS THE OLDER SISTER. THIS GIRL (point to bottom half) IS THE YOUNGER SISTER. EACH GIRL IS SUPPOSED TO DUST HER ROOM. EACH GIRL WILL GET AN ICE CREAM CONE IF SHE DUSTS HER ROOM. THIS SISTER (point to top half) DUSTED HER ROOM LIKE SHE WAS SUPPOSED TO, BUT THIS SISTER (point to bottom half) DID NOT DUST HER ROOM LIKE SHE WAS SUPPOSED TO.

(Point to a child) WHAT ARE THESE GIRLS SUPPOSED TO DO?

(Child responds)

If correct: YES, EACH GIRL IS SUPPOSED TO DUST HER ROOM.
If incorrect: NO, EACH GIRL IS SUPPOSED TO DUST HER ROOM. WHAT ARE THESE GIRLS SUPPOSED TO DO? (Child responds; reinforce)

(Point to another child) WHAT WILL EACH SISTER GET IF SHE DUSTS HER ROOM?

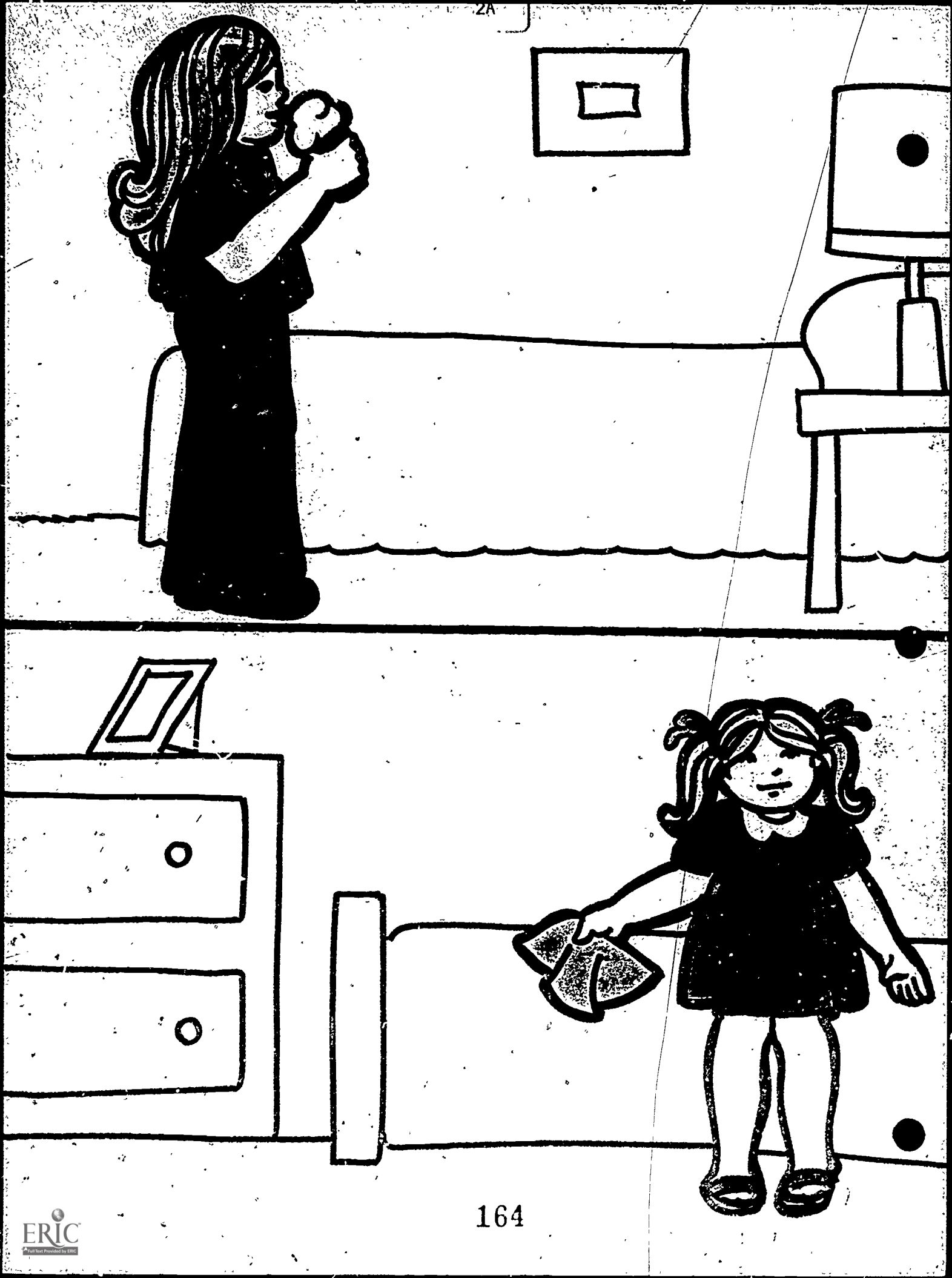
(Child responds)

If correct: YES, EACH GIRL WILL GET AN ICE CREAM CONE IF SHE DUSTS HER ROOM.
If incorrect: NO. EACH GIRL WILL GET AN ICE CREAM CONE IF SHE DUSTS HER ROOM. NOW TELL ME WHAT EACH SISTER WILL GET IF SHE DUSTS HER ROOM. (Child responds; reinforce)

(Point to another child) ONLY ONE SISTER DID WHAT SHE WAS SUPPOSED TO DO. POINT TO THE SISTER WHO DUSTED HER ROOM.

(Child responds)

If correct: YES, THIS SISTER (point to top half) DUSTED HER ROOM BUT THIS SISTER (point to bottom half) DID NOT DUST HER ROOM.
If incorrect: NO, THIS SISTER (point to top half) DUSTED HER ROOM BUT THIS SISTER (point to bottom half) DID NOT DUST HER ROOM. NOW POINT TO THE SISTER WHO DUSTED HER ROOM. (Child responds; reinforce)



Show Picture No. 2A

THIS SISTER (point to girl in top half) DUSTED HER ROOM LIKE SHE WAS SUPPOSED TO DO SO SHE GOT AN ICE CREAM CONE. THIS SISTER (point to girl in bottom half) DID NOT DUST HER ROOM LIKE SHE WAS SUPPOSED TO DO SO SHE SHOULD NOT HAVE AN ICE CREAM CONE.

(Point to a child) TELL ME WHY THIS SISTER (point to top half) HAS AN ICE CREAM CONE BUT THIS SISTER (point to bottom half) DOES NOT HAVE AN ICE CREAM CONE.

(Child responds)

If correct: YES. SHE DUSTED HER ROOM LIKE SHE WAS SUPPOSED TO SO SHE SHOULD HAVE AN ICE CREAM CONE. THIS SISTER (point to lower half) DID NOT DUST HER ROOM LIKE SHE WAS SUPPOSED TO SO SHE SHOULDN'T HAVE AN ICE CREAM CONE.

If incorrect: NO. THIS GIRL (point to top half) DUSTED HER ROOM LIKE SHE WAS SUPPOSED TO SO SHE SHOULD HAVE AN ICE CREAM CONE. THIS SISTER (point to lower half) DID NOT DUST HER ROOM LIKE SHE WAS SUPPOSED TO SO SHE SHOULDN'T HAVE AN ICE CREAM CONE. NOW TELL ME WHY THIS SISTER (point to top half) HAS AN ICE CREAM CONE BUT THIS SISTER (point to bottom half) DOES NOT HAVE AN ICE CREAM CONE. (Child responds: reinforce)

Show Picture No. 2B

LET'S PRETEND THAT BOTH SISTERS GOT ICE CREAM CONES EVEN THOUGH THIS SISTER (point to bottom half) DID NOT DUST HER ROOM LIKE SHE WAS SUPPOSED TO. THIS SISTER (point to bottom half) SHOULD NOT HAVE AN ICE CREAM CONE BECAUSE SHE DID NOT DUST HER ROOM. THIS SISTER (point to top half) SHOULD HAVE AN ICE CREAM CONE BECAUSE SHE DUSTED HER ROOM LIKE SHE WAS SUPPOSED TO.

(Point to a child) TELL ME WHY THIS SISTER (point to bottom half) SHOULD NOT HAVE AN ICE CREAM CONE.

(Child responds)

If correct: THAT'S CORRECT. SHE SHOULD NOT HAVE AN ICE CREAM CONE BECAUSE SHE DID NOT DUST HER ROOM LIKE SHE WAS SUPPOSED TO.

If incorrect: NO. SHE SHOULD NOT HAVE AN ICE CREAM CONE BECAUSE SHE DID NOT DUST HER ROOM LIKE SHE WAS SUPPOSED TO. NOW TELL ME WHY THIS SISTER (point to bottom half) SHOULD NOT HAVE AN ICE CREAM CONE. (Child responds; reinforce)

Show Picture No. 3

THESE FOUR GIRLS ARE FRIENDS WHO ARE SUPPOSED TO BE COLLECTING OLD POP BOTTLES FROM AROUND THE NEIGHBORHOOD. THE OWNER OF THE GROCERY STORE WILL PAY THEM A FEW PENNIES FOR EVERY BOTTLE THEY TAKE TO THE STORE. THESE TWO GIRLS (point to the two girls stooping down) WORKED VERY HARD AND COLLECTED LOTS OF EMPTY POP BOTTLES. THESE TWO GIRLS (point to the 2 girls watching) DIDN'T HELP COLLECT BOTTLES AT ALL. INSTEAD THEY PLAYED IN THE SWINGS IN THE SCHOOL YARD.

(Point to a child) WHAT ARE ALL OF THESE GIRLS SUPPOSED TO BE DOING?

(Child responds)

If correct: YES. THEY'RE SUPPOSED TO BE COLLECTING EMPTY POP BOTTLES.
If incorrect: NO. THEY'RE SUPPOSED TO BE COLLECTING EMPTY POP BOTTLES. WHAT ARE THEY SUPPOSED TO BE DOING? (Child responds; reinforce)

(Point to another child) WHAT WILL THE GIRLS GET FOR THE EMPTY BOTTLES THEY COLLECT?

(Child responds)

If correct: YES. THE OWNER OF THE GROCERY STORE WILL PAY THEM A FEW PENNIES FOR EVERY BOTTLE THEY COLLECT.
If incorrect: NO. THE OWNER OF THE GROCERY STORE WILL PAY THEM A FEW PENNIES FOR EVERY BOTTLE THEY COLLECT. NOW TELL ME WHAT THE GIRLS WILL GET FOR THE EMPTY BOTTLES THEY COLLECT? (Child responds; reinforce)

(Point to another child) SHOW ME WHICH GIRLS DID NOT HELP COLLECT EMPTY POP BOTTLES.

(Child responds)

If correct: YES. THESE TWO GIRLS (point to 2 girls watching) DID NOT HELP COLLECT EMPTY BOTTLES. INSTEAD THEY PLAYED ON THE SWINGS IN THE SCHOOLYARD.
If incorrect: NO. THESE TWO GIRLS (point to 2 girls watching) DID NOT HELP COLLECT EMPTY POP BOTTLES. INSTEAD THEY PLAYED ON THE SWINGS IN THE SCHOOLYARD.

Show Picture No. 3A

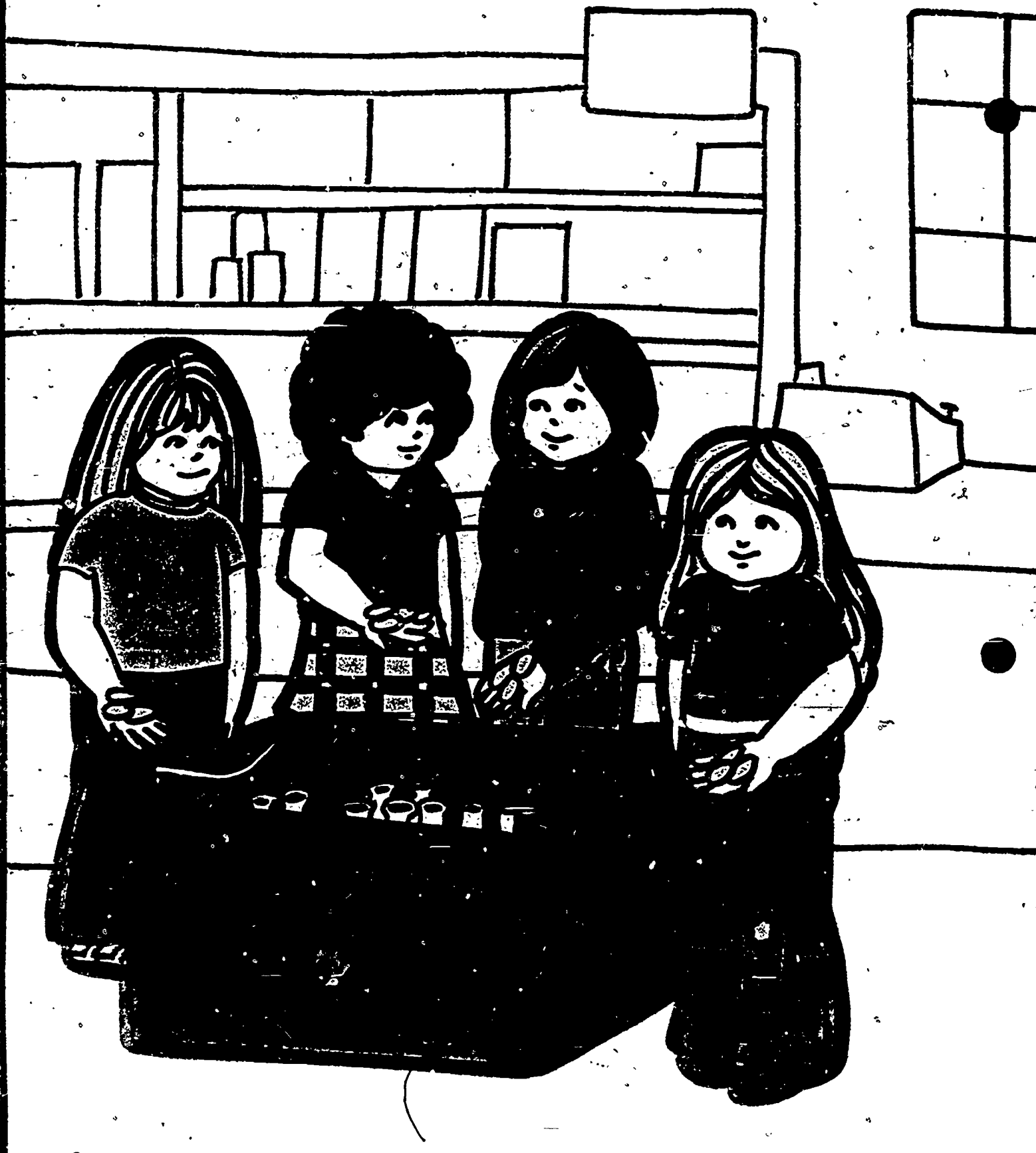
NOW SUPPOSE THAT THE OWNER OF THE STORE GAVE THESE TWO GIRLS (point to the 2 girls watching) THE MONEY FOR THE EMPTY POP BOTTLES BUT THESE TWO GIRLS (point to girls putting empty pop bottles in box) DIDN'T GET ANY MONEY. THAT IS NOT RIGHT. THESE TWO GIRLS (point to 2 on left) DID NOT HELP COLLECT THE EMPTY POP BOTTLES SO THEY SHOULD NOT GET ANY MONEY. THESE TWO GIRLS (point to 2 girls stooping) SHOULD HAVE THE MONEY BECAUSE THEY ARE THE ONES WHO COLLECTED THE EMPTY POP BOTTLES.

(Point to a child) TELL ME WHY THESE TWO GIRLS (point to girls on left) SHOULD NOT HAVE THE MONEY.

(Child responds)

If correct: THAT'S CORRECT. THESE TWO GIRLS (point to 2 girls on left) SHOULD NOT HAVE THE MONEY BECAUSE THEY DIDN'T HELP COLLECT THE EMPTY POP BOTTLES. These two girls (point to 2 girls on right) SHOULD HAVE THE MONEY BECAUSE THEY COLLECTED THE BOTTLES.

If incorrect: NO. THESE TWO GIRLS (point to 2 on left) SHOULD NOT HAVE THE MONEY BECAUSE THEY DIDN'T HELP COLLECT THE EMPTY POP BOTTLES. THESE TWO GIRLS (point to 2 on right) SHOULD HAVE THE MONEY BECAUSE THEY COLLECTED THE BOTTLES. NOW TELL ME WHY THESE TWO GIRLS (point to girls on left) SHOULD NOT HAVE THE MONEY. (Child responds; reinforce)



Show Picture No. 3B

NOW LET'S PRETEND THAT THE OWNER OF THE STORE GAVE ALL FOUR GIRLS SOME MONEY FOR THE BOTTLES THEY BROUGHT TO THE STORE. THIS IS NOT RIGHT. THESE TWO GIRLS (point to 2 on left) DID NOT HELP COLLECT THE EMPTY POP BOTTLES SO THEY SHOULD NOT GET ANY MONEY. THESE TWO GIRLS (point to 2 on right) SHOULD RECEIVE THE MONEY BECAUSE THEY DID ALL THE WORK OF COLLECTING THE EMPTY BOTTLES.

(Point to a child) TELL ME WHY THESE TWO GIRLS (point to 2 on left) SHOULD NOT HAVE ANY MONEY.

(Child responds)

If correct: THAT'S CORRECT. THEY SHOULD NOT HAVE ANY MONEY BECAUSE THEY DID NOT HELP COLLECT THE EMPTY POP BOTTLES. ONLY THESE TWO GIRLS (point to 2 on right) SHOULD HAVE THE MONEY.

If incorrect: NO. THEY SHOULD NOT HAVE ANY MONEY BECAUSE THEY DID NOT HELP COLLECT THE EMPTY POP BOTTLES. ONLY THESE TWO GIRLS (point to 2 on right) SHOULD HAVE THE MONEY. NOW TELL ME WHY THESE TWO GIRLS (point to 2 on left) SHOULD NOT HAVE ANY MONEY. (Child responds; reinforce)

Show Picture No. 3C

NOW LET'S PRETEND THE OWNER OF THE STORE GAVE THESE TWO GIRLS SOME MONEY FOR THE BOTTLES THEY TOOK TO HIS STORE (point to 2 girls on right) BUT HE DID NOT GIVE THESE OTHER TWO GIRLS ANY MONEY (point to 2 girls on left). THIS IS RIGHT BECAUSE THESE TWO GIRLS (point to 2 girls on right) DID ALL THE WORK OF COLLECTING THE EMPTY POP BOTTLES AND TAKING THEM TO THE GROCERY STORE. THESE OTHER TWO GIRLS SHOULD NOT HAVE ANY MONEY BECAUSE THEY DID NOT HELP COLLECT THE EMPTY POP BOTTLES.

(Point to a child) TELL ME WHY THESE TWO GIRLS (point to girls on the left) SHOULD NOT HAVE ANY MONEY.

(Child responds)

If correct: THAT'S CORRECT. THEY SHOULD NOT HAVE ANY MONEY BECAUSE THEY DID NOT HELP COLLECT THE EMPTY POP BOTTLES.

If incorrect: NO. THEY SHOULD NOT HAVE ANY MONEY BECAUSE THEY DID NOT HELP COLLECT THE EMPTY POP BOTTLES. NOW TELL ME WHY THESE TWO GIRLS (point to girls on the left) SHOULD NOT HAVE ANY MONEY. (Child responds; reinforce)

Show Picture No. 4

THESE TWO BOYS ARE BROTHERS. THEY ARE SUPPOSED TO HANG UP THEIR CLOTHES WHEN THEY TAKE THEM OFF. THEIR DADDY IS A PILOT IN THE AIR FORCE. HE TOLD THEM IF THEY WOULD HANG UP THEIR CLOTHES WHEN THEY TAKE THEM OFF EVERY DAY FOR ONE WEEK HE WOULD TAKE THEM UP IN A JET FOR A RIDE. THIS BROTHER (point to child hanging up his coat) HUNG UP HIS CLOTHES FOR ONE WEEK LIKE HE WAS SUPPOSED TO. THIS BROTHER (point to child dropping his coat on the upholstered chair) DID NOT HANG UP HIS CLOTHES FOR ONE WEEK LIKE HE WAS SUPPOSED TO.

(Point to a child) WHAT ARE THESE BOYS SUPPOSED TO DO?

(Child responds)

If correct: YES, THEY ARE SUPPOSED TO HANG UP THEIR CLOTHES.
If incorrect: NO, THEY ARE SUPPOSED TO HANG UP THEIR CLOTHES. WHAT ARE THEY SUPPOSED TO DO? (Child responds; reinforce)

(Point to another child) WHAT WILL EACH BOY GET IF HE HANGS UP HIS CLOTHES FOR ONE WEEK?

(Child responds)

If correct: YES. HE WILL GET A RIDE IN A JET PLANE.
If incorrect: NO. HE WILL GET A RIDE IN A JET PLANE. WHAT WILL EACH BOY GET IF HE HANGS UP HIS CLOTHES FOR ONE WEEK? (Child responds; reinforce)

(Point to another child) WHICH CHILD HUNG UP HIS CLOTHES FOR ONE WEEK LIKE HE WAS SUPPOSED TO?

(Child responds)

If correct: YES, THIS BOY (point to child on left) HUNG UP HIS CLOTHES FOR ONE WEEK LIKE HE WAS SUPPOSED TO.
If incorrect: NO. THIS BOY (point to child on left) HUNG UP HIS CLOTHES FOR ONE WEEK LIKE HE WAS SUPPOSED TO. NOW SHOW ME WHICH CHILD HUNG UP HIS CLOTHES FOR ONE WEEK LIKE HE WAS SUPPOSED TO. (Child responds; reinforce)

Show Picture No. 4A

THIS BOY (point to boy in cockpit) HUNG UP HIS CLOTHES FOR ONE WEEK LIKE HE WAS SUPPOSED TO. HE IS TAKING OFF ON A JET RIDE WITH HIS FATHER. THIS BOY (point to boy waving from ground) DID NOT HANG UP HIS CLOTHES LIKE HE WAS SUPPOSED TO. HE CANNOT HAVE A JET RIDE WITH HIS FATHER.

(Point to a child) IS IT RIGHT FOR THIS BOY (point to child in cockpit) TO HAVE A JET RIDE WITH HIS FATHER BUT FOR THIS BOY (point to child on ground) NOT TO HAVE A JET RIDE WITH HIS FATHER?

(Child responds)

If correct: YOU ARE CORRECT. THIS BOY (point to a child in cockpit) HUNG UP HIS CLOTHES FOR ONE WEEK LIKE HE WAS SUPPOSED TO SO HE SHOULD HAVE THE JET RIDE WITH HIS FATHER. THIS BOY (point to boy on ground) DID NOT HANG UP HIS CLOTHES FOR ONE WEEK LIKE HE WAS SUPPOSED TO. SO HE SHOULDN'T HAVE A JET RIDE WITH HIS FATHER.

If incorrect: NO. THIS BOY (point to child in cockpit) HUNG UP HIS CLOTHES FOR ONE WEEK LIKE HE WAS SUPPOSED TO SO HE SHOULD HAVE THE JET RIDE WITH HIS FATHER. THIS BOY (point to boy on ground) DID NOT HANG UP HIS CLOTHES FOR ONE WEEK LIKE HE WAS SUPPOSED TO. SO HE SHOULD NOT HAVE A JET RIDE WITH HIS FATHER.

Show Picture No. 5

THESE THREE PEOPLE (point to each) ARE BROTHERS AND SISTERS. THEIR FATHER TOLD THEM IF THEY WILL CLEAN THEIR ROOMS TODAY HE WILL TAKE THEM TO THE MOVIES. THE BROTHER (point to boy) CLEANED HIS ROOM LIKE HE WAS SUPPOSED TO. THIS SISTER (point to girl with dustcloth) ALSO CLEANED HER ROOM LIKE SHE WAS SUPPOSED TO. BUT THIS SISTER (point to girl on telephone) TALKED TO HER FRIENDS ON THE TELEPHONE INSTEAD OF CLEANING HER ROOM.

(Point to a child) WHAT ARE THESE SISTERS AND BROTHER SUPPOSED TO DO?

(Child responds)

If correct: YES, THEY ARE SUPPOSED TO CLEAN THEIR ROOMS.
If incorrect: NO, THEY ARE SUPPOSED TO CLEAN THEIR ROOMS. NOW TELL ME WHAT THEY ARE SUPPOSED TO DO. (Child responds; reinforce)

(Point to another child) WHAT WILL HAPPEN IF EACH PERSON CLEANS HIS OR HER ROOM?

(Child responds)

If correct: YES, THEY CAN GO TO A MOVIE WITH THEIR FATHER.
If incorrect: NO, THEY CAN GO TO A MOVIE WITH THEIR FATHER. NOW TELL ME WHAT WILL HAPPEN IF THEY DO THEIR JOB. (Child responds; reinforce)

(Point to another child) WHICH ONE OF THESE PEOPLE DID NOT CLEAN THE ROOM?

(Child responds)

If correct: YES, THIS SISTER (point to girl on telephone) TALKED ON THE TELEPHONE INSTEAD OF CLEANING HER ROOM.
If incorrect: NO, THIS SISTER (point to girl on telephone) TALKED ON THE TELEPHONE INSTEAD OF CLEANING HER ROOM. NOW WHICH ONE OF THESE PEOPLE DID NOT CLEAN THE ROOM? (Child responds; reinforce)


TICK

Show Picture No. 5A

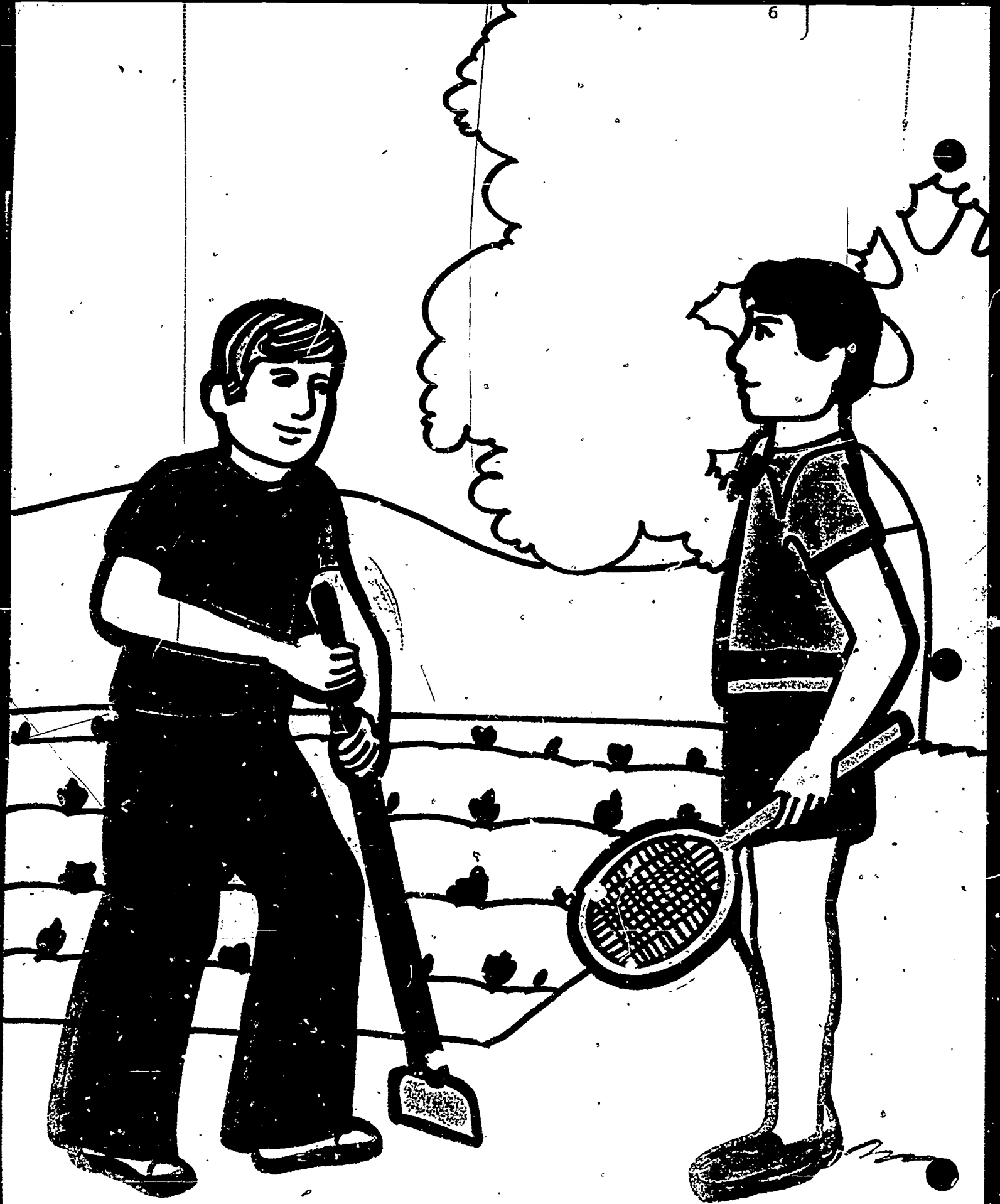
THIS BROTHER AND SISTER (point to the boy and the younger girl) CLEANED THEIR ROOMS LIKE THEY WERE SUPPOSED TO. THEY ARE GOING TO A MOVIE WITH THEIR FATHER LIKE HE PROMISED. THIS SISTER (point to the older girl) DID NOT CLEAN HER ROOM LIKE SHE WAS SUPPOSED TO. SHE IS ALSO GOING TO THE MOVIE.

(Point to a child) IS IT RIGHT FOR ALL THREE OF THESE BROTHERS AND SISTERS TO GO TO THE MOVIE WITH THEIR FATHER?

(Child responds)

If correct: YOU ARE CORRECT. THIS SISTER (point to older girl) DID NOT CLEAN HER ROOM SO IT IS NOT RIGHT FOR HER TO GO TO THE MOVIE.

If incorrect: NO. THIS SISTER (point to the older girl) DID NOT CLEAN HER ROOM SO IT IS NOT RIGHT FOR HER TO GO TO THE MOVIE. TELL ME WHY IT IS NOT RIGHT THAT SHE SHOULD GO TO THE MOVIE. (Child responds; reinforce)



Show Picture No. 6

THESE MEN DECIDED TO PLANT AND TAKE CARE OF A VEGETABLE GARDEN TOGETHER. IF THEY BOTH WORKED HARD TO PLANT AND TAKE CARE OF THE GARDEN EACH ONE COULD HAVE THE SAME AMOUNT OF VEGETABLES AS THE OTHER ONE. THIS MAN (point to man with hoe) WORKED VERY HARD TO PLANT AND TAKE CARE OF THE GARDEN. THIS MAN (point to man in tennis outfit) DECIDED HE WOULD RATHER PLAY TENNIS SO HE DID NOT PLANT AND TAKE CARE OF THE GARDEN WITH HIS FRIEND.

(Point to a child) WHAT WERE THESE MEN SUPPOSED TO DO TOGETHER?

(Child responds)

If correct: YES, THEY WERE GOING TO PLANT AND TAKE CARE OF A VEGETABLE GARDEN TOGETHER.
If incorrect: NO. THEY WERE GOING TO PLANT AND TAKE CARE OF A VEGETABLE GARDEN TOGETHER. NOW TELL ME WHAT THEY WERE GOING TO DO TOGETHER. (Child responds; reinforce)

(Point to another child) WHAT WOULD EACH MAN GET IF HE WORKED HARD TO PLANT AND TAKE CARE OF THE GARDEN?

(Child responds)

If correct: YES, EACH ONE COULD HAVE THE SAME AMOUNT OF VEGETABLES AS THE OTHER ONE.
If incorrect: NO. EACH ONE COULD HAVE THE SAME AMOUNT OF VEGETABLES AS THE OTHER ONE. NOW TELL ME WHAT EACH MAN WOULD GET IF HE WORKED HARD TO PLANT AND TAKE CARE OF THE GARDEN? (Child responds; reinforce)

(Point to another child) WHICH MAN WORKED HARD TO PLANT THE GARDEN AND TAKE CARE OF IT?

(Child responds)

If correct: YES, THIS MAN (point to man with hoe) WORKED VERY HARD TO PLANT THE GARDEN AND TAKE CARE OF IT. THIS OTHER MAN (point to man in tennis outfit) DID NOT PLANT AND TAKE CARE OF THE GARDEN LIKE HE SAID HE WOULD.
If incorrect: NO. THIS MAN (point to man with hoe) WORKED VERY HARD TO PLANT THE GARDEN AND TAKE CARE OF IT. THIS OTHER MAN (point to man in tennis outfit) DID NOT PLANT AND TAKE CARE OF THE GARDEN LIKE HE SAID HE WOULD. NOW TELL ME WHICH MAN WORKED HARD TO PLANT THE GARDEN AND TAKE CARE OF IT? (Child responds; reinforce)

Show Picture No. 6A

THIS MAN (point to man with the hoe) WORKED VERY HARD TO PLANT AND TAKE CARE OF THE VEGETABLE GARDEN. HE DOES NOT HAVE ANY VEGETABLES. THIS MAN (point to man in tennis outfit) DID NOT HELP AT ALL TO PLANT THE GARDEN OR TAKE CARE OF THE VEGETABLE GARDEN. HE HAS A BIG BASKET OF VEGETABLES FROM THE GARDEN.

(Point to a child) IS IT RIGHT FOR THIS MAN (point to man in tennis outfit) TO HAVE VEGETABLES FROM THE GARDEN BUT FOR THIS MAN (point to man with hoe) NOT TO HAVE ANY VEGETABLES?

(Child responds)

If correct: YOU ARE CORRECT. IT IS NOT RIGHT FOR THIS MAN (point to man in tennis outfit) TO HAVE THE VEGETABLES BECAUSE HE DID NOT HELP PLANT AND TAKE CARE OF THE VEGETABLE GARDEN. THIS MAN (point to man with the hoe) SHOULD HAVE THE VEGETABLES BECAUSE HE WORKED HARD TO PLANT AND TAKE CARE OF THE GARDEN.

If incorrect: NO. IT IS NOT RIGHT FOR THIS MAN (point to man in tennis outfit) TO HAVE THE VEGETABLES BECAUSE HE DID NOT HELP PLANT AND TAKE CARE OF THE VEGETABLE GARDEN. THIS MAN (point to man with the hoe) SHOULD HAVE THE VEGETABLES BECAUSE HE WORKED HARD TO PLANT AND TAKE CARE OF THE GARDEN. TELL ME WHY IT IS NOT RIGHT THAT THIS MAN (point to man in tennis outfit) SHOULD HAVE THE VEGETABLES. (Child responds; reinforce)

YOU ALL HAVE BEEN GOOD THINKERS. YOU WATCHED AND LISTENED CAREFULLY AND WERE GOOD LEARNERS. NOW YOU MAY (describe the next activity planned for the children in the preschool).

End of Lesson 1

Child's Name_____ Teacher_____

Child's age_____ Date of test_____

Picture 1 Yes____ No____

Why:

Picture 2 Yes____ No____

Why:

Picture 3 Yes____ No____

Why:

Picture 4 Yes____ No____

Why:

Picture 5 Yes____ No____

Why:

Picture 6 Yes____ No____

Why:

Picture 7 Yes____ No____

Why:

Picture 8 Yes____ No____

Why:

Picture 9 Yes____ No____

Why:

Picture 10 Yes____ No____

Why:

BEHAVIOR

Phase 1

Number given to himself/herself____

Number given to "other" child____

Number left over____

Why:

Phase 2

Number to child with 1 picture____

Number to child with 2 pictures____

Number left over____

Why: