Creativity and the learning environment: Development of an instructional instrument

by

Carol Field Dahlstrom

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CHAPTER I. INTRODUCTION

> It is not a scientifically certifiable fact that each child born into the world comes with the potential to create. It is rather a statement of faith. But I can think of no declaration more important for America to make. Imagine a society wholly resolved that all of us have the potential to affect the quality of the day. To do this, said Thoreau, is the highest of the arts.
>
> Bill Moyers
> Creativity, I.P.B.N.
> TV Broadcast, (1982)

Statement of the Problem

The purposes of this thesis are:

1. To study the current interest and trend toward teaching creativity in the public schools and the linkage of this activity with gifted and talented education.

2. To review the literature dealing with the classroom learning environment and its importance in teaching creativity.

3. To analyze instructional materials on the market that include a concern for the learning environment when teaching creative thinking skills.

4. To design a teaching instrument that will consider the learning environment as an important component of creativity instruction and activities.

Need for the Study

In James Gallagher's book, Teaching the Gifted Child (1975), he states:

> More articles and books have been written on the subject of creativity in the past ten years than in all the accumulated educational literature before that time.

This increased interest in creativity and teaching creative thinking skills has been encouraged by two major influences.

One major influence for the increased interest in creativity in the public schools is our rapidly changing society. With whole new fields of study coming into existence in the space of five to ten years, the preparation of the work force of tomorrow must consider thinking skills that go beyond the learning of specific facts. Silberman, 1970, as cited by Gallagher (1975), is credited for this suggestion to educators:

> To be practical, an education should prepare a man for a work that doesn't yet exist and whose nature cannot even be imagined.

Teaching the memorization of specific facts has been replaced by teaching new ways of thinking.

The second influence for the interest in creativity and teaching creative thinking skills is the increased number of gifted and talented programs and the inclusion of creativity in the curriculum for this particular audience. As late as

1972, the U. S. Commissioner of Education's Report to Congress disclosed that less than half of the states had approved legislation to fund programs for the six to nine percent gifted and talented student population. Since that report, however, the number of gifted programs has mushroomed. In 1980, the Office of the Gifted and Talented recorded a record total of 409 grant applications (Clark, 1979).

While some have defined creativity as being synonymous with giftedness, it may better be described as a necessary companion to giftedness. One of the most often used definitions of a gifted student is a child with the following characteristics:

1. Above average ability
2. Task commitment
3. Creativity

While interest in developing creativity programs is a trend in today's school curriculum, the best way to teach these skills must also be an important consideration.

Research has indicated that establishing the proper learning environment increases the success of teaching creative thinking skills. It is also important, within this learning environment, that teachers know what creativity skills to encourage and what behaviors to reward.

The trend toward providing creativity instruction in the public schools and the increased interest in the education

of the gifted and talented has created a need for teaching materials in this area. A number of creativity/activity books are presently on the market. The author has discovered, however, that research dealing with the importance of the learning environment has, for the most part, been ignored in the development of these instructional materials.

As part of this thesis, the author has developed a practical teaching instrument that translates the research on creativity dealing with the learning environment and teacher preparedness into a workable handbook for the teaching of creative thinking skills.

The author assumes, for the purposes of this study, that programs for the gifted and talented will continue to grow in public education. The author also assumes that society will continue to value and demand creative thinking skills and that this demand will be reflected in the public school curriculum. Furthermore, the author assumes that the classroom teacher will continue to have some physical and social control of his or her classroom and thus will continue to be able to dictate the learning environment.

Limitations of the Study

The focus of this study has determined, in part, the following definitions and limitations to the scope of the thesis.

1. For the purpose of this thesis, the term creative thinking will be understood to concur with the definition offered by E. Paul Torrance (1965):

> Creative thinking takes place in the process of sensing difficulties, problems, gaps in information, missing elements; making guesses or formulating hypotheses about deficiencies; testing these guesses and possibly revising and retesting them: and finally in communicating the results.

2. Because of the linkage between creativity and gifted education, the reference to gifted and talented is often made. No attempt to debate or define the distinction of gifted and talented will be made in this paper.

3. For the purpose of this study, the learning environment will be limited to the physical, psychological/social, and instructional aspects of the classroom environment.

4. The instructional tool developed by the author for teachers of creative thinking does not attempt to cover all of the aspects of creative thinking that could benefit this audience.

Summary

The main purpose of this study is to review the concept of creativity and identify those conditions in the learning environment that encourage the development of creativity. Based on this research, the author will design a teaching

instrument that considers the learning environment as an important component of creativity instruction and activities.

There has been an increased interest in the effective teaching of creative thinking skills because of the demands of a rapidly changing society and the resulting increase in the number of gifted and talented programs. The author assumes that these trends will continue. The author also assumes that teachers will maintain their role and responsibility for establishing the classroom environment.

For the purpose of this study, the author has chosen to share the definition of creative thinking developed by E. Paul Torrance. The concept of the learning environment is limited to the physical, psychological/social, and instructional aspects of the classroom. The instructional tool presented does not attempt to cover all aspects of creative thinking.

CHAPTER II. REVIEW OF THE LITERATURE

Defining Creativity

Creativity! It has been called an enigmatic process, an undefinable term, an extraordinary act, and an everyday affair. Over the years, scholars and researchers, artists and philosophers have used a variety of words to define this amazing phenomenon. There is a basic tension between those who believe creativity to be a mystery, possibly a gift to genius alone, and those who believe it can be demystified, nurtured, even democratized. One school will have nothing to do with trying to dissect creativity into scientifically defined variables. Another considers creativity to be the endowment of all of us.

Barbara Clark, in her book Growing up Gifted (1979), relates:

> Probably the most unexplainable part of creativity lies in the fact that, even though few agree on a definition, when we say the word, everyone senses a similar feeling. We may not be able to explain what it is rationally, but we know what it is just the same. When we are being creative, we are aware of its special excitement. (Clark, 1979)

While the concept of creativity has been studied and pondered since the earliest writings of man, initial research

during the early decades of this century was limited. American psychologists, concerned with developing a truly scientific approach to the study of human behavior, frowned upon something as "mystical" or "spiritual" as creativity. Psychologists tended to study those behaviors associated with creativity which lent themselves to quantification and analysis.

In 1950, as president of the American Psychological Association, J.P. Guilford expressed concern over the lack of research into creative behavior. He initiated, at that time, a long-term project to study creativity and used his presidential address to tell the large audience what he planned to do (Eisner, 1964). His speech had a catalytic effect. Others began to study different aspects of the problem and by the middle of the 1950s, centers for the study of creativity dotted the country. Psychologists and educators were awakened to one of the most valuable of human traits -- creativity.

While this increase in research dealing with creativity is documented, the agreement among researchers as to the definition of creativity is more difficult to find. A number of investigators have defined creativity by contrasting it with conformity. In general, creativity has been seen as contributing original ideas, different points of view, and new ways of looking at problems. Conformity has been seen as doing what is expected (Crutchfield, 1962; Wilson, 1956; as cited

by Torrance, 1965).

H. H. Anderson, 1959, as cited by Torrance (1965), emphasizes the search for the truth and living truthfully as part of his definition of creativity. He is especially insistent that the creative environment must provide freedom for each person to respond truthfully with his whole person as he sees and understands the truth.

Some find it easiest to explain creativity as an incorporation of functions. Jung, 1964, as cited by Clark (1979), lists these functions as rational thinking, high levels of emotional development or feeling, talent and high levels of mental and physical development, and higher levels of consciousness, resulting in the use of imagery, fantasy and breakthroughs to the preconscious or unconscious state. Only as these functions combine and interact, drawing from and giving to each other, can creativity occur. Most authors do acknowledge the holistic nature of creativity although some definitions fail to include this thought.

Treffinger, et al. (1970) suggests this over-all concept of creativity with his addition of the term divergent thinking.

> Many researchers regard creativity and divergent thinking as synonymous constructs. We prefer, however, to use the term divergent thinking in reference to all variables derived from tests of divergent production in Guilford's 'structure of intellect' model...and to use the term 'creativity' in reference to global behavior that exhibits fluency, flexibility, and/or originality in applied or real-life situations.
> (Treffinger, et al., 1970)

The creative thinking abilities of fluency, flexibility, originality, and elaboration are the cognitive component parts of creativity that appear most consistently when describing creative thinking. These abilities are defined:

> FLUENCY: The ability to generate a ready flow of ideas, possibilities, consequences, and objects.
>
> FLEXIBILITY: The ability to use many different approaches or strategies in solving a problem; the willingness to change direction and modify given information.
>
> ORIGINALITY: The ability to produce clever, unique, and unusual responses.
>
> ELABORATION: The ability to expand, develop, particularize, and embellish one's ideas, stories, and illustrations.
>
> (Renzulli, 1976)

These factors are ones that teachers can emphasize to stimulate further creative thought.

Williams, 1970, as cited by Gallagher (1975), adds another dimension to the traditional cognitive factors by adding the affective dimensions of risk taking, curiosity, complexity, and imagination. Williams encourages the teacher to consider the use of a greater variety of behaviors in the total definition of creativity.

The very term "creativity" has drawn criticism from some frustrated scholars and researchers. These persons are opposed to the word "creativity" because of its overuse in

society. Other researchers avoid the word and the concept of creativity because they feel it is too value laden and non-specific. This author, however, would agree with the opinion of E. Paul Torrance, one of the most noted researchers of creativity in the twentieth century, when he said,

> I believe the word describes the behavior investigated more adequately than any other word I know. (Torrance, 1972)

Dr. Torrance describes creative thinking as:

> ...taking place in the process of sensing difficulties, problems, gaps in information, missing elements; making guesses or formulating hypotheses about deficiencies; testing these guesses and possibly revising and retesting them; and finally in communicating the results. (Torrance, 1965)

For the purpose of this thesis, the author will share this definition with Dr. Torrance.

Creativity and Gifted Education

Because the "creativity boom" has, in part, been influenced by the increase in the number of gifted and talented programs in schools, it is important to discuss the close correlation between creativity and gifted and talented education.

Creative learning is obviously important to all students. The linkage between creativity and gifted and talented

education, however, can be explained by discussing some common characteristics of gifted children:

> Curiosity
> Imagination
> Productivity
> Independence in thought and judgment
> Extensive fund of information and ideas
> Persistence
> Commitment to solving problems
> Concern with the future and the unknown, not merely with the past, the present, or the known
>
> (Treffinger, 1980)

All students have some creative potential and there is very little doubt that students' creative behavior can be enhanced.

With these characteristics in mind, Donald Treffinger in his book Encouraging Creative Learning for the Gifted and Talented (1980) gives the following reasons for concluding that creative learning is particularly important for gifted and talented students:

1. Creative learning is natural for students who possess the characteristics (of curiosity, etc.).
2. Creativity may be an important and fundamental component of giftedness in different areas of expression (Gowan, 1977; Renzulli, 1978).
3. Even though high intellectual ability, as traditionally measured, is not a guarantee of high creativity, it may be that it is at such higher levels that the "door may be opened" for the development of significant creative expressions.
4. Because gifted and talented students may often require less time for routine tasks or assignments, even for the basics they

need to learn, their time and opportunity for creative learning may be greater.

5. Creative learning is an important foundation for effective enrichment and independent study.
6. Gifted and talented students profit greatly from learning explicitly about the process of creative learning, as well as from involvement in that process. This specific knowledge of process is an invaluable aid to them in organizing, conducting, and evaluating their own learning and growth (in school and out).

(Treffinger, 1980)

The research and inclusion of creativity in the definition of giftedness is a fairly recent phenomenon.

For many years, psychologists were satisfied with an operational definition of giftedness or intelligence: intelligence is what an I.Q. measures. It took a theoretic psychologist, J. P. Guilford, to firmly demonstrate that there are a number of dimensions of intellectual performance that are not measured by standard I.Q. tests -- divergent thinking for example. His work stimulated the inclusion of creativity as an important human function.

The conceptual model that undergirded much of the effort to measure and develop creativity is Guilford's Structure of the Intellect Model. The structure is a three sided cube consisting of intellectual operations, products, and content (Gallagher, 1975).

While the association between creativity and intelligence is a fairly new linkage, many pioneers in the field of

gifted and talented education now include creativity as part of the definition of gifted and talented children.

Joseph Renzulli lists the characteristics of a gifted child as a child with:

1. Above average ability
2. Creativity
3. Task commitment

He suggests that a child must display all of these characteristics to be identified as gifted (Renzulli, 1981, as cited by Breiter, 1981).

Donald J. Treffinger (1980) lists four major reasons for educators to be concerned with independent, creative learning for gifted and talented students. These are:

1. Increased Effectiveness: Students' independence and creativity helps them to be more effective, even when adults are not around.
2. Possibilities for Solving Future Problems: There is little doubt that life in our contemporary world involves many complex problems, for which creative solutions would certainly be welcome.
3. Powerful Consequences for Living: When people are asked to describe their best learning experiences -- those that have had the greatest and most significant impact upon them in their daily lives -- it is very common for them to describe experiences which are their 'closest encounters' with independent, creative learning. Creative learning is truly within the reach of many people.
4. Satisfaction and Joy: Independent, creative learning is also a source of great personal satisfaction and joy for those who are involved in it.

(Treffinger, 1980)

The Learning Environment

In a paper presented by E. Paul Torrance, he states that it is a popular notion that "nobody can teach anybody anything" (Wees, 1971, as cited by Torrance, 1972). This attitude behooves this author to briefly address the problem of whether creativity can be taught. To briefly answer this question the author agrees with the following statement by E. Paul Torrance:

> I know that it is possible to teach children to think creatively and that it can be done in a variety of ways. I have done it. I have seen my wife do it. I have seen other excellent teachers do it. I have seen children who had seemed previously to be 'non-thinkers' learn to think creatively, and I have seen them continuing for years thereafter to think creatively. I have seen, heard, and otherwise experienced their creativity.
>
> (Torrance, 1972)

The most appropriate quality in discussing whether creativity can be taught may be to suggest that skills are involved in creative thinking and skills of any kind have to be practiced to function very well (Torrance, 1972).

If one assumes that creativity can be taught, then it seems important to note what kind of learning environment is most conducive for creative thinking. The author finds this analogy by M. S. Allen, 1962, as cited by Torrance (1965) appropriate for beginning a discussion of appropriate learning environment for creativity.

> J. S. Allen offers, from his boyhood experiences, the interesting analogy of facing an icy blast as he stepped out of the kitchen door of his Massachusetts home on a winter morning. He says his reaction was to cover up a little more completely. He then points out that an idea that meets an icy blast is likewise painful to the producer. He tends to cover up and to withhold excellent ideas as well as ideas that are different. A person soon learns that it is better not to express his most precious ideas in an unfriendly environment.
>
> (Torrance, 1965)

The importance of the learning environment when teaching creativity has been researched and documented. It is important for the purposes of this paper to define the learning environment and its limitations within this paper. The intention is not to legislate or legitimize the word for everyone; rather, only to clarify the meaning for this paper.

This paper will assume the learning environment to include the physical, psychological/social, and instructional aspects of the environment present in the classroom. The physical environment will include limited physical attributes of the classroom such as temperature, design, etc. The psychological/social environment can be defined as the general interrelationships and interaction among human beings and the way in which human beings relate to and deal with other human beings (Hassett and Weisberg, 1972). The instructional environment will include the teacher's style and preparedness in knowing what to look for in creative behavior.

When reviewing the literature dealing with the learning environment probably the most frequent comparison is made between an open and a traditional classroom setting. These descriptive terms imply openness as a physical attribute as well as a more permissive atmosphere and traditional as a more structured atmosphere both physically and socially in the classroom.

The open classroom is often considered a more personally-oriented classroom and the traditional classroom more achievement oriented instructionally. Open classrooms tend to emphasize individual freedom and innovation, while the traditional approach stresses learning existing solutions for problems rather than approaches to problem solving.

The success of open and traditional classrooms in fostering creativity has been studied by a number of researchers. Torrance, 1963, consistently found unevaluated practice (open classroom) more effective in encouraging originality and elaboration than evaluated practice (traditional approach) in the primary grades (Torrance, 1963, as cited by McCormick, Sheehy, and Mitchell, 1978). Haddon and Lytton, 1972, found that children from informal classrooms performed significantly better on tests of divergent thinking ability tests (Haddon and Lytton, 1972, as cited by Ramey and Piper, 1974).

A study by McCormick, Sheehy, and Mitchell (1978), found that children from the open classroom scored significantly

higher than the traditional classroom in terms of total creative expression scores and on subscores for productivity using the Gross Geometric Forms Test. In a study by Ramey and Piper (1974), comparing open and traditional classrooms on creative expression, measures derived from the Torrance Tests of Creative Thinking indicated that the open classroom setting was related to superior performance on the figural component of that test.

Another area of research dealing with the learning environment is the effect of the teacher and teacher style on creative thinking. Renzulli and others (1976), cites a study done by Provus (1966), where a group of sixty classroom teachers was asked to use a variety of selected creativity materials on a trial basis. A major conclusion of the study was that "the effectiveness of all creative learning materials used in the experiment was wholly dependent upon the style of the classroom teacher. That is, no amount of sophistication in materials could compensate for the methodological predispositions of the teacher" (Provus, 1966, as cited by Renzulli and others, 1976).

In a class offered by Dr. Joan Breiter at Iowa State University (1981), Dr. Breiter gave six examples of teacher style:

I. Task Oriented Teacher: The teacher has an exact system of accounting with little flexibility in the task.

II. Cooperative Planning Teacher: The ideas of the learner are considered. The means to the end of instruction is important.

III. Child Centered Teacher: The teacher acts as a stretcher, then provides materials.

IV. Subject Centered Teacher: The teacher is most interested in covering the subject and getting the information to the child.

V. Learning Centered Teacher: The teacher focuses attention on the child and the subject.

VI. Emotionally Exciting or Emotionally Neutral: The teacher gets very involved and intense or neutral and low key.

Dr. Breiter recommends that a teacher needs to learn to shift styles to match the child's learning style.

Yamamoto, 1967, identifies the importance of flexibility in the classroom environment and in the methods of the teacher.

> It is generally assumed that the creative individual is sensitive to problems, fluent with ideas, and original (uncommon, clever). If this description is anywhere near the truth, we may make the following predictions about the classroom behavior of creative teachers: The more creative teachers are more sensitive than their less creative colleagues to pupil needs and to environmental defects that detract from the effectiveness of their pupil's educational experiences. The more creative teachers are clever in their approaches and always ready to organize their methods to facilitate pupils' development. It would seem likely that the more creative teachers could provide a classroom environment, a climate, and a teaching more conducive to pupils' intellectual and social-personal development than the less creative could.
>
> (Yamamoto, 1967, as cited by Hoskin and Swick, 1973)

Note that he also suggests that adjusting teacher behavior to pupil demand is a characteristic of a creative teacher.

Treffinger (1979), defines five different teaching styles, along with the goals and objectives of each style:

I. Command Style: Teacher defines and prescribes for class.
II. Task Style: Teacher defines and prescribes for class or groups of students.
III. Peer-Partner Style: Teacher-paired partners based on complementary skills, in relation to specific curriculum objectives.
IV. Pupil-Teacher Contract Style: Teacher and student confer to develop/select appropriate objectives for curriculum areas.
V. Self-Directed Learning Style: Learner chooses area and defines objectives for major project. Teacher provides resources and consultation.

(Treffinger, 1979, as cited by Breiter, 1981)

Dr. Treffinger suggests that teacher styles III, IV, or V are most successful when teaching and encouraging creative thinking.

The success of teaching creative thinking skills, then, depends a great deal on the teaching style or instructional environment of the instructor as well as the physical and psychological/social environment. One other dimension of the instructional environment is discussed in a study by Wasik (1974). Mr. Wasik did a study concerned with teacher preparedness in what to look for in creative behaviors. Several

studies have suggested that many teachers do not understand what is meant by creativity and are unable to identify creative talent among students (Williams, 1964, as cited by Wasik, 1974).

Using Guilford's S.O.I. model as a testing measurement, Mr. Wasik found that even with an open system, unless teachers know what behaviors are indicative of a "creative person," the teacher will not be able to differentiate between students in terms of their creative ability. Mr. Wasik concludes his study with this suggestion:

> If this is the case then there appears to be a need for providing teachings in recognizing creative abilities as a prerequisite to providing teachers with instructional strategies for fostering these kinds of skills. (Wasik, 1974)

One aspect of the learning environment that is often overlooked is the physical environment of the classroom. While there may be some aspects of the physical environment that cannot be changed, the physical environment can usually be altered to be more conducive to creative thinking.

Much of the research done on the physical environment and learning style has been done by Rita Dunn. Dunn lists the following elements of the physical environment of the classroom and the learner:

Classroom:

1. Sound
2. Temperature
3. Light
4. Design

Learner:

1. Perceptual Strengths -- multi sensory approach.
2. Intake -- eating, drinking, gum, etc.
3. Time of Day -- morning or afternoon.
4. Need for Mobility -- moving around the room.

(Dunn, 1979, as cited by Breiter, 1981)

Each of these elements affects the learning style and the total physical environment of the classroom.

Doris J. Shallcross in her book Teaching Creative Behavior, 1981, gives this description of a physical environment conducive to creative thinking:

> The classroom requires a physical arrangement that is supportive to the kinds of activities the teacher wants to conduct or allow. It need not be elaborately or expensively equipped. Virtually any existing classroom can be arranged to allow large group and small group spaces, as well as areas for students to work in pairs or alone. The point is, the teacher needs to provide a setting that affords the kinds of spaces appropriate to different kinds of pursuits...they need to have some sort of space that has been allocated to them alone...any spot they can claim as their own.

Shallcross also suggests that each student has a "keeping place" for their private property.

> If, in creative behavior, we are asking students to take risks, to try new things, to dare to be different, then we need to guarantee them some privacy while they are in the process of risking.
>
> (Shallcross, 1981)

In developing a climate for creativity, the teacher needs to stress the importance of respecting private spaces and properties.

Creativity can be viewed as a process of change in thinking and actions. The combination of ideas previously unconnected into a novel idea or concept requires change. In order to foster creativity in the classroom, a positive, reinforcing, comfortable, accepting climate are basic ingredients necessary in the learning environment for the nurturance of creative behavior. New or different ideas can flourish in an open system, one that is flexible and oriented towards the individual student. In such an atmosphere, the emphasis rests on the student's interests, ideas, and privacy which is directly influenced by the teacher style.

It is also important for teachers to understand the basic components of creativity and what behaviors and products are unique to creative behavior. While the research is fairly consistent in establishing the importance of the learning

environment, the majority of materials that teach creative thinking and are directed to the elementary teacher fail to include this vital component.

A Review of Instructional Materials That Teach Creative Thinking

There has been an interest in the kind of learning environment most conducive to creative learning. Research has suggested the importance of teacher style, physical, and psychological/social environments. The research, however, for the most part, remains ignored in the instructional materials available to the classroom teacher who desires to teach creative thinking.

The purpose of this part of the thesis is to list some of the instructional materials available to teachers of creative thinking and to review the emphasis that the instrument places on the learning environment. The instructional materials listed have been compiled by information received from a personal letter from E. Paul Torrance, University of Georgia, Athens (May 26, 1982), a personal letter from Joseph Renzulli and Deborah Burns, University of Connecticut, Storrs (September 1, 1982), and in a review of instructional materials and books for teaching creativity and problem solving done by Feldhusen and Treffinger in their book Teaching Creative Thinking and Problem Solving (1977). The information was also

compiled by a self-directed search of materials within the libraries of gifted and talented centers as well as a computer search.

The search for materials was primarily directed toward finding teaching materials that emphasize the learning environment as an important part of the total creative thinking experience, as well as containing specific creativity activities within the instructional tool. While creative exercises can be found in teaching materials of a specific teaching discipline (science, math), this search for materials was for instruments that cut across subject matter lines.

While the following list of materials is, in no way, a complete collection of the resources available to teachers, it should serve to support the need for a practical teaching instrument that includes the learning environment as an important part of teaching creative activities. The resources listed are divided into two areas: I. Those materials available to teachers that contain interdisciplinary creative activities for children that contain little or no information for the teacher concerning the learning environment; and II. Those materials available to teachers that contain interdisciplinary creative activities for children that include an emphasis on and information about the learning environment.

I. Teaching materials that contain interdisciplinary creative activities for children that contain little or no information for the teacher concerning the learning environment:

Aiding Basic Creativity by Hugh J. Sloan

The book contains ideas on stimulating and motivating art experiences for pupils. Over twenty activities are suggested for each grade level. Teacher information limited to suggestions for materials and directions.

Creative Handbook Ideas by Mary Jackson Ellis

A source of 87 ideas which stress originality. No information is given regarding the learning environment.

Creative Moments Kits from Creative Studies, Inc.

This kit is a collection of creative activities in folders. Each folder presents a complete activity. There is no teachers' guide. Limited directions for use on the folder are designed for the student.

Creative Teaching Games by Linda Polon and Wendy Pollitt

This book offers over forty educational games that are designed to stimulate and motivate children. No mention of the learning environment is given.

Developing Creativity in Children by Charles E. Schaefer

This idea book contains activities and includes visualization skills. The introduction lists characteristics of a highly creative person and how to kill creativity.

Plants and Animals Activity Pack by Linda Schwartz and Sue Aleksich

This book contains activities to promote creative thinking in various disciplines. No concern for the learning environment is mentioned.

Put Your Mother on the Ceiling by Richard DeMille

This book deals with children's imagination games. While there is much discussion about the concept of imagination, specific learning environmental conditions are ignored.

Think Big: Special Projects for Creative Thinking by Martha Symonds

This book contains no introduction for teachers regarding the teaching/learning environment. The book emphasizes creative cognitive skills.

Think-Ins by Sandra Nina Kaplan

This is a set of 30 task cards that provide ideas and suggestions to stimulate creative thinking and problem solving. Information for the teacher is limited to an explanation of the format.

Thinker Sheets by Becky and Charlie Daniel

The activity book contains pull-out, reprintable sheets to be used in the classroom. No mention of learning environment is given.

II. Teaching materials that contain interdisciplinary creative activities for children that include an emphasis on and information about the learning environment:

A Total Creativity Program for Individualizing and Humanizing the Learning Process by Frank E. Williams

This program is probably the most elaborate on the market. While scholarly in nature, this program is designed to give teachers help in identifying, encouraging, and assessing children's creative talents in the classroom as well as providing activities. It contains eleven components in a vinyl carrying case.

Creative Actionbook by Sidney J. Parnes and Ruth B. Noller

> This book contains information concerning the learning environment. The emphasis of the book is on skills for creative problem solving.

Ideabooks by E. Paul Torrance and R. E. Myers

> These books contain activities which require students to be both receptive and critical of others. The teacher's guide stresses the importance of creating a climate in which a child can think without inhibitions or restrictions. Each unit tells how to set the stage, present the lesson, and evaluate the outcome.

New Directions in Creativity, Mark A,B,1,2,3 by Joseph Renzulli and others

> This five volume idea/activity book has reprintable pull-out pages. The introduction to each volume explains the concept of creativity and general strategies for using the materials, giving some specific word approaches. Most effective for grades 4-8.

The author would like to note that the materials listed that do consider the learning environment as an important component of the total creativity learning package are quite scholarly in nature and require a great deal of teacher time in order to use the materials with the exception of the Renzulli materials. Many of these materials are also in multiple volumes.

Summary

The concept of creativity is difficult to define. Until recently many researchers avoided the concept because of its intangible quality. The recent interest and research in creativity has linked the concept with gifted and talented education. Researchers have stressed the importance of teaching creative thinking skills to this particular audience.

Research indicates the importance of the learning environment when teaching creative thinking. For the purpose of this study, the learning environment was limited to include the physical, psychological/social, and instructional aspects of the classroom. An open classroom with a flexible teaching style that varies with the student's learning style was found to be most conducive to creative thinking. The teacher must also know what to look for in creative behavior and product. The physical environment needs to be supportive and flexible to match changes in teaching methods and needs to provide private space to individual children.

The instructional materials presently on the market that teach creative thinking skills for the most part fail to include information as to how to establish the most conducive environment for teaching creative thinking. It is the opinion of this author, based on the previous research cited, that there is a definite need for a visually stimulating, compact, teaching instrument that contains creative activities for

children with teacher information dealing with the learning environment in a readable and desirable format. There is a definite need for an instrument that fills the gap between the research on creativity and the realities of the classroom.

CHAPTER III. AN INSTRUCTIONAL TOOL -- CREATIVITY: A SOLUTION FOR CREATIVE THINKING IN THE CLASSROOM

Rationale for Developing an Instructional Tool

Thus far this thesis has established the importance of the learning environment when teaching creative thinking skills and the need for a teaching instrument that not only provides the teacher with stimulating creative activities for children but places an emphasis on the importance of the learning environment and what to look for in creative behavior and product.

The author has designed a teaching instrument to meet the needs of the teacher of creative thinking skills based on the research cited thus far. The author has chosen to use visual motivators and art-related activities based on the success of these kinds of materials as vehicles for teaching creativity as researched by Torrance (1972). Torrance found programs involving the creative arts as a vehicle for creative thinking successful in around seventy-five percent of the programs studied (Torrance, 1972).

Using a non-verbal approach such as art-related activities and visual motivators also has the advantage of appealing to those young children who can respond to the visuals without having reading skills. The author has also witnessed the excitement that the use of art-related activities brings to

children during her many years in art and gifted classrooms.

The teaching instrument contains some teacher games that are designed to help the instructor relax, become more flexible and playful, and emit a more open or accepting attitude toward unusual ideas. The author was influenced by personal classroom experience and by a personal interview and the written work of Robert McKim in developing the teacher relaxation exercises (McKim, 1972).

In the creative activity section of the instrument, the author has included activities that could be classified as Type III activities as described by Renzulli's enrichment triad model (Renzulli, 1981, as cited by Breiter, 1981). Renzulli suggests that Type III activities are especially suitable for gifted children.

In the study, the author has listed some teaching instruments presently on the market. While some of the teaching instruments do contain information about the learning environment, it is the opinion of the author that the format of these materials is so scholarly and verbose in nature that few teachers would take the necessary time to sift through the materials to find information about establishing the learning environment. Based on the experience of the author, the instructional tool developed in this study has been designed to require a minimum of teacher time to analyze and use.

Objectives of a New Instructional Tool

Based on the previous research cited and the years of experience of the author in art and gifted classrooms, these are the objectives of the teaching instrument:

--to appeal visually and in content to the elementary teacher teaching creativity to elementary children.

--to design a format that is non-threatening in approach.

--to design activities that encourage fluency, flexibility, elaboration, and originality.

--to make suggestions for the teachers for a learning environment that will produce maximum creative thinking.

--to provide direction as to what to look for in creative behavior.

--to provide teachers with a variety of instructional approaches to increase creative thinking.

--to use art-related activities and motivators as a vehicle for creative thinking.

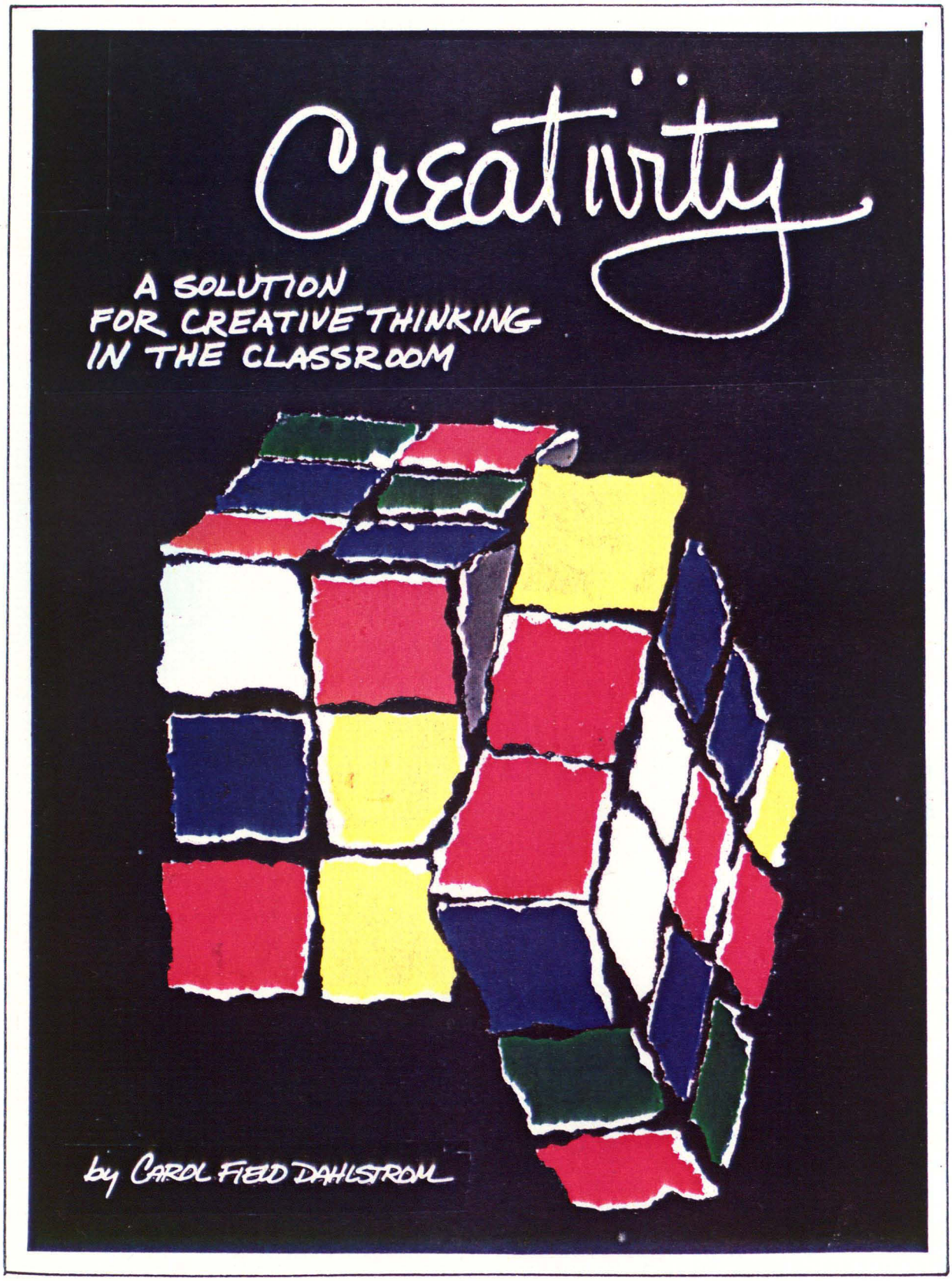
--to cut across curricular areas.

--to create a feeling of openness and playfulness for both student and teacher.

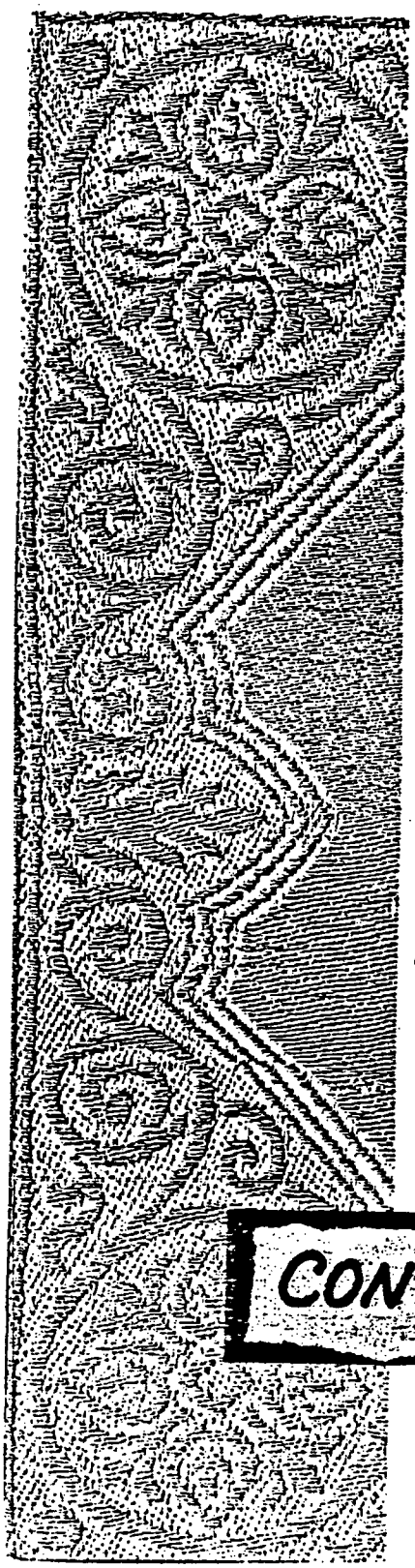
--to create activities to teach creative thinking that do not require expensive materials.

--to produce an instrument that is itself a creative product.

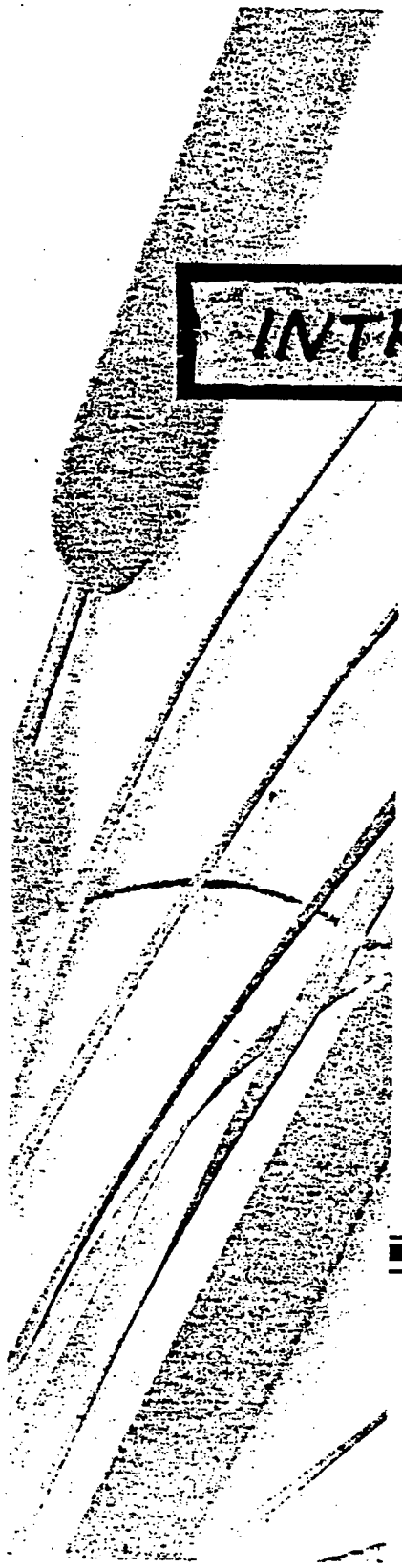
It is the hope of the author that this instructional guide, "Creativity: A Solution for Creative Thinking in the Classroom" will be an effective tool for teaching creativity.


Creativity
A SOLUTION
FOR CREATIVE THINKING
IN THE CLASSROOM
by CAROL FIELD DAHLSTROM


WRITTEN AND
DESIGNED BY
Carol Field Dahlstrom



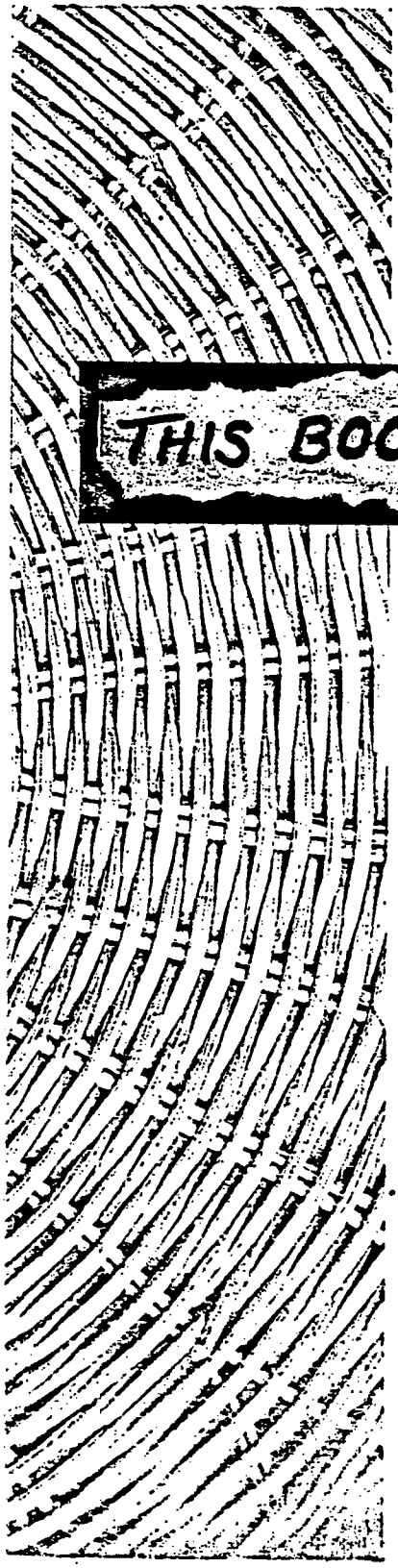
CONTENTS



INTRODUCTION

IMAGINATION
is more
IMPORTANT
than Knowledge.

Albert Einstein



This book is about creativity.
It will help you
to KNOW
what it is,
to SUGGEST
ways to teach it, and
to ALLOW
for it to happen.

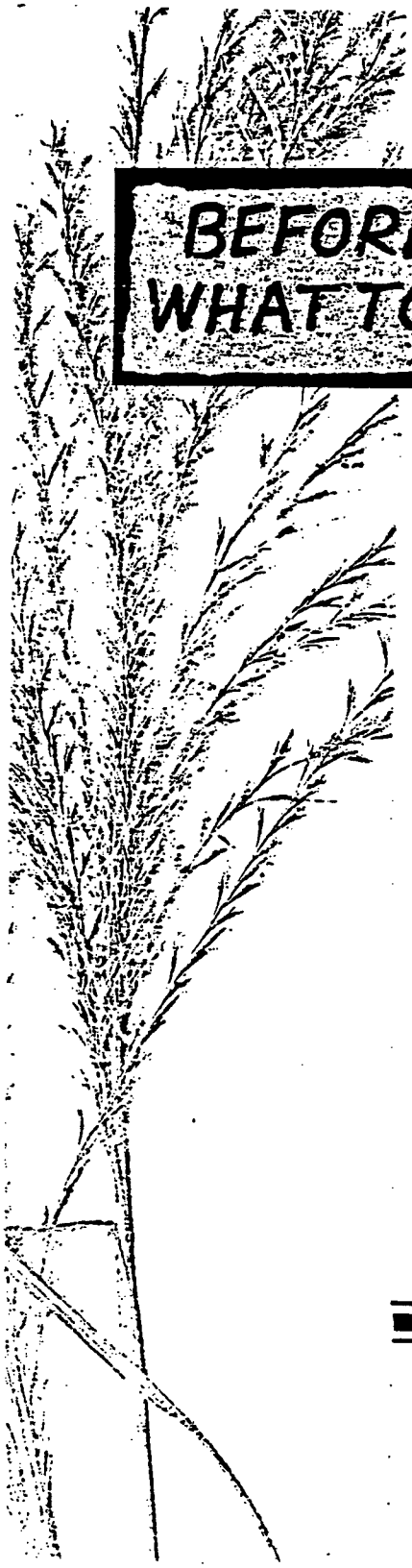
THIS BOOK IS ABOUT

The last part of this book is filled with creative activities to use in your classroom that are designed
to PROMOTE
and ENRICH
CREATIVE BEHAVIOR.

Research has shown, however, that it takes more than good activities to teach creative thinking.

YOU, the teacher, are equally important if
CREATIVE THINKING
is allowed to happen.

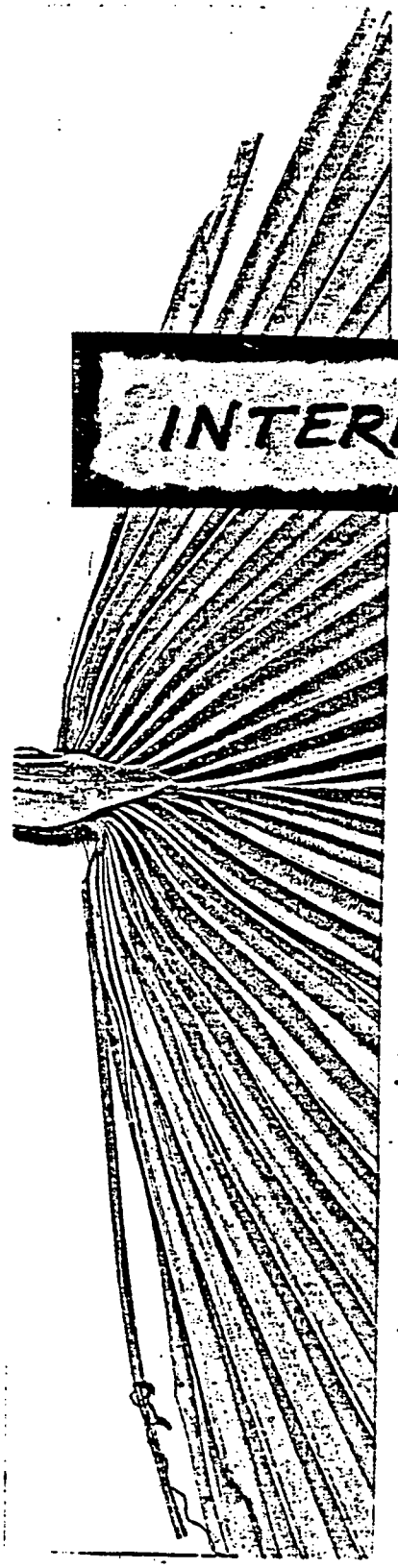
Therefore,
The first part
of this book
is for you,
THE TEACHER.



BEFORE YOU TEACH: WHAT TO THINK ABOUT

Not only is there
an ART
in knowing a thing,
but also
a certain ART
in teaching it.

CICERO



If you are reading and considering this material then you must have some genuine INTEREST in teaching children to be more CREATIVE.

INTEREST

The concept of CREATIVITY has been defined and redefined over the years.

One of the most unexplained things about creativity is, however, that even though few agree on a definition, everyone seems to SENSE a similar feeling.

We are talking about a SPECIAL EXCITEMENT that is usually considered a desirable trait for students and teachers to have.

The following page contains a few THOUGHTS ON CREATIVITY from other INTERESTED PERSONS.

CREATIVITY

Creativity is the
ABILITY
to see and to respond.
FROMM

To be creative means to
EXPERIENCE LIFE
in one's own way
to perceive from one's
own person
to draw upon one's
RESOURCES
CAPACITIES and
ROOTS.
MOUSTAKAS

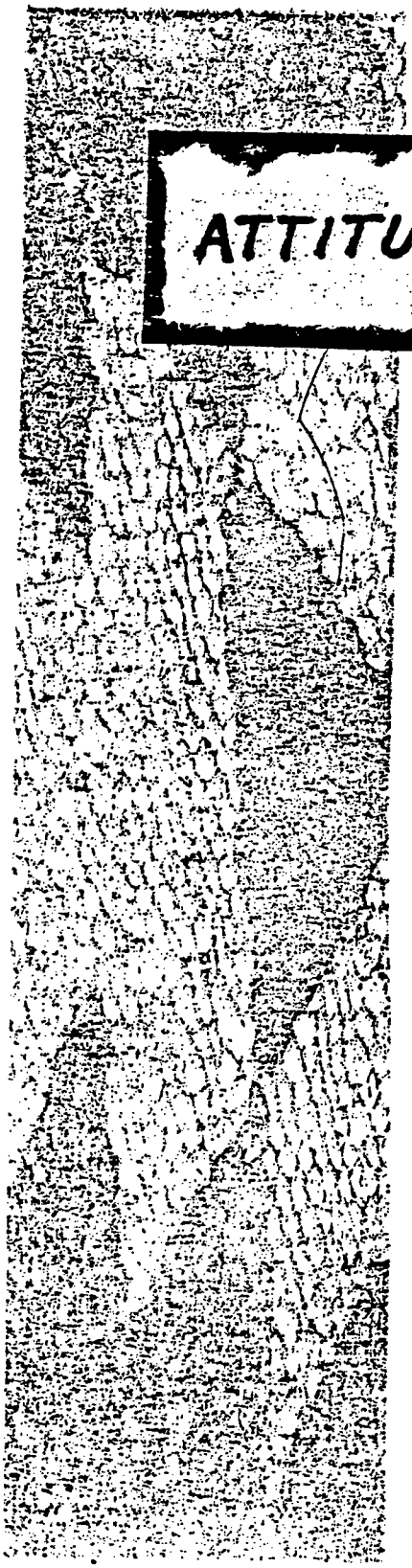
Originality is simply
a **FRESH** pair of eyes.
WOODROW WILSON

None but
BLOCKHEADS
copy each other.
WILLIAM BLAKE

Creativity is a way of
CONDUCTING
one's life
rather than in terms of the
number and kinds of objects
which one produces.
HALLMAN

Creativity: igmajinashion.
3rd Grader

The human race
is **GOVERNED** by
its imagination.
NAPOLEON BONAPARTE



ATTITUDES

You have read some definitions of creativity and can certainly find many more.

While definitions of **CREATIVITY** give us a clearer understanding of the word, the **ATTITUDE** toward the concept is more important than verbalizing a perfect definition.

The success of any materials that teach creative thinking depends on the **APPROACH** and the **ATTITUDE** of the **TEACHER**.

Try to establish what your **ATTITUDE** is toward **CREATIVITY** by taking the quiz on the following page.

CREATIVITY QUIZ

QUESTIONS

1. Most persons can be taught to think creatively.
T F

2. Creativity is something you either have or you don't.
T F

3. Children who think creatively are always model students.
T F

4. Creativity is only associated with artists.
T F

5. The attitude and approach of the teacher is very important.

ANSWERS

1. True. Often it is a matter of allowing creative thinking to happen.

2. False. Most persons possess the ability to learn or relearn creative thinking.

3. False. Oftentimes the very creative thinker is more devisive and finds routine difficult to manage.

4. False. Many of the world's greatest scientists, musicians, mathematicians, and inventors are successful because of creative thinking abilities.

5. True. Research has shown that teacher attitude and approach are very important. It is hoped that the exercises in this book will help develop the attitude and approach most conducive to creative thought.

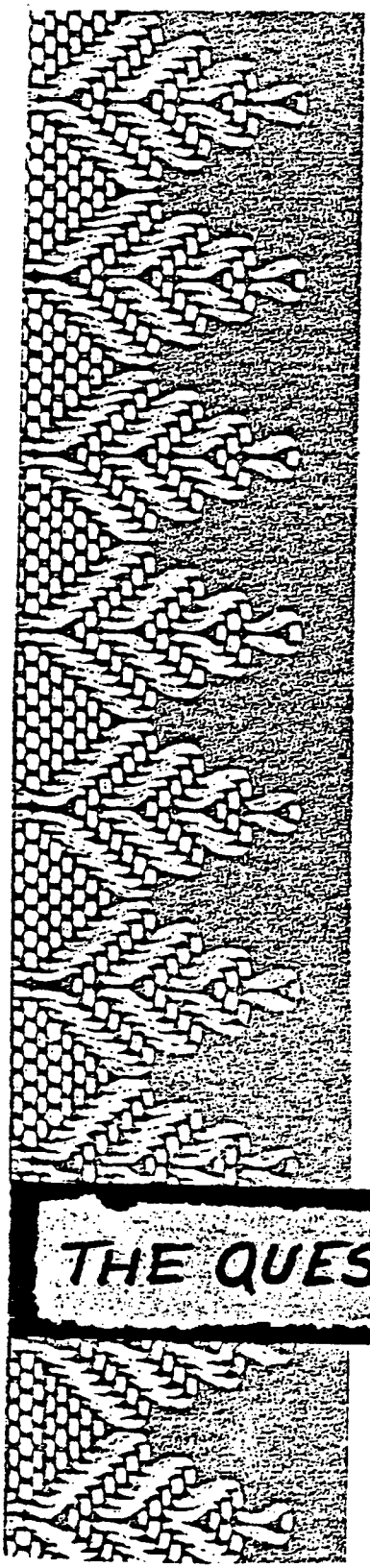
It is important that the attitude of the teacher be complimented by an **ENVIRONMENT** that is conducive to **CREATIVE THINKING.**

ENVIRONMENT

When we discuss the word **ENVIRONMENT** we often limit our definition to the physical environment.

The physical environment is very important, but equally important is the social environment. The social environment can be thought of as a **TEACHER STYLE** or **APPROACH.**

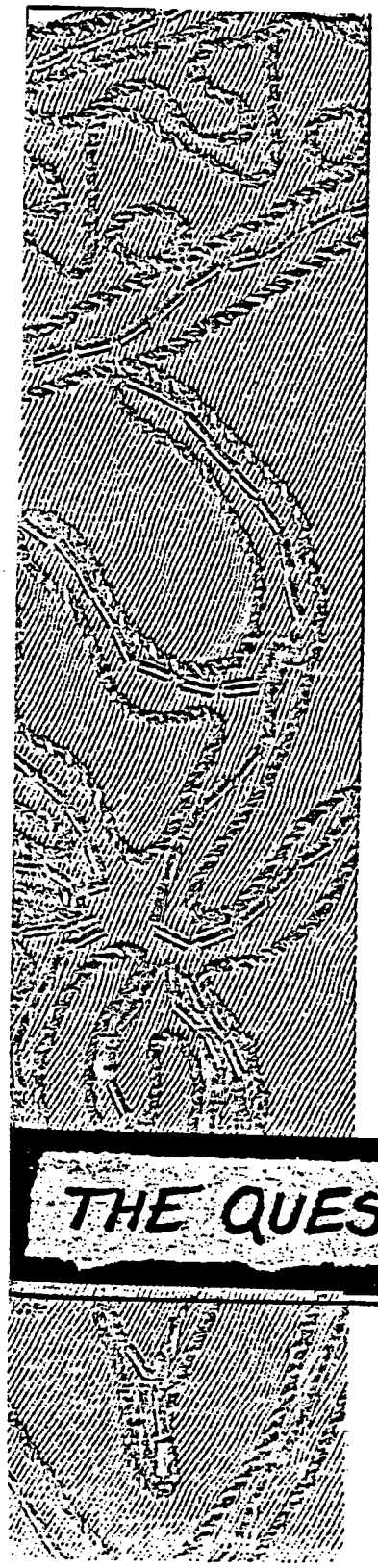
The following pages contain some important questions about the **PHYSICAL ENVIRONMENT** and the **SOCIAL ENVIRONMENT.**



THE QUESTIONS

1. Do children have some private **SPACE** of their own?
2. Is there a **PRIVATE** learning area away from the class where a child can sit and think?
3. Is the desk arrangement **FLEXIBLE** to accomodate different activities?
4. Is there at least one **WINDOW** that can be opened?
5. Is **LIGHTING** adequate in all areas of the room?
6. Are the children allowed to **MOVE FREELY** around the room to get materials?
7. Can the teacher regulate the **TEMPERATURE** of the room?
8. Are the walls painted a pleasing **COLOR**?
9. Is the furniture designed to fit the **SIZE** of the student?

PHYSICAL ENVIRONMENT



THE QUESTIONS

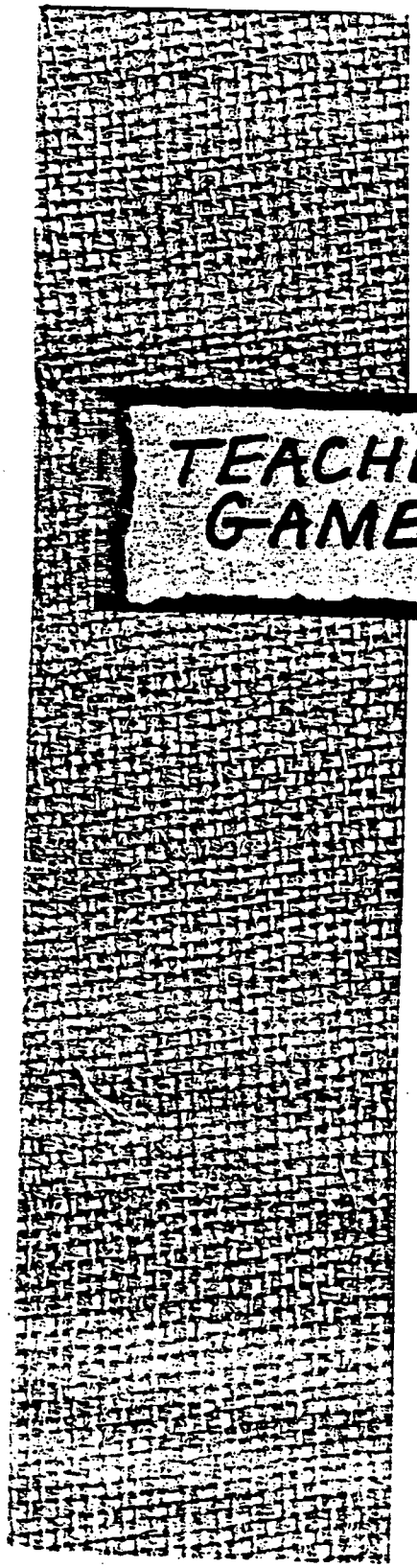
1. Are the students **EAGER** to start the school day?
2. Would the child feel **COMFORTABLE** telling the teacher a personal problem?
3. Are questions **ENCOURAGED** during all types of lessons?
4. Are non-conforming answers to questions **ACCEPTED** or considered?
5. Is the teacher **FLEXIBLE** with the schedule of the school day?
6. Does the teacher encourage positive **CREATIVE BEHAVIOR** when the child's peers disapprove?
7. Is **PLAYFULNESS** allowed when thinking of new ideas?

SOCIAL ENVIRONMENT

When introducing creative exercises to children it is important to use ACTION WORDS that signal creative responses.
Try to use some of these WORDS when introducing the creative activities.

WORDS

ANALYZE
CAPTURE
CREATE
DESIGN
FEEL
EXPAND
EXPLORE
EXPERIENCE
ELABORATE
FANTASIZE
HARMONIZE
IMAGINE
ILLUSTRATE
IMPLY
REFLECT
RELATE
ENJOY
SEEK
SENSE
SKETCH
SEARCH
SYMBOLIZE



TEACHER GAMES

If you have decided that a more **CREATIVE CLASSROOM** and more **CREATIVE STUDENTS** are objectives you have, then you may want to take a personal and pleasurable step before introducing the creative exercises to the students.

You may want to **REPROGRAM** yourself to a more relaxed and open teaching style.

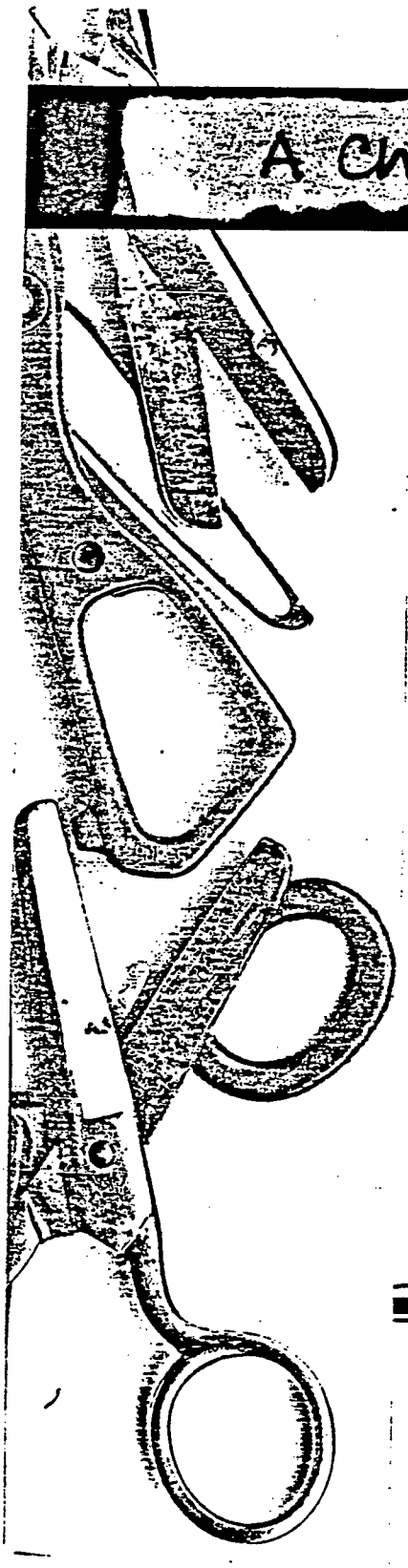
All educators realize that different subject areas and objectives require different teacher approaches or **TEACHER STYLES**. It is sometimes difficult to make the switch from teaching fractions or spelling to a playful creative problem solving lesson.

The teacher games on the following pages are **MENTAL EXERCISES** to

RELAX you
LOOSEN you up and help **REMOVE** any mental blocks that might keep you and your students from **ENJOYING** and benefitting from the creative exercises.

Hopefully these mental games may help you put more energy toward producing a **CREATIVE ENVIRONMENT** to work in.

A Change of Habit

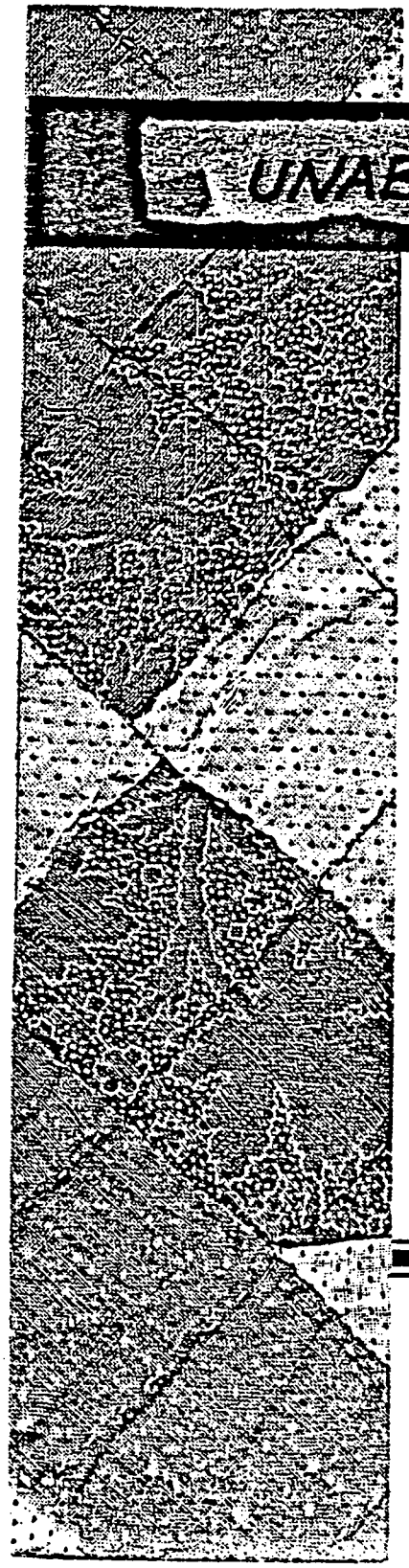


Follow these directions:

1. **PICK** an object in the room. Example: Scissors
2. Give the object a **NEW** name. Example: Boknives
3. **PRETEND** the object can talk.
4. **ASK** the object a question. Write down the answer.
5. Pick up the object or **TOUCH** it.
6. Try to tie it in a **KNOT**.
7. **FIND** something new on it that you never saw before!
8. Think of a new **USE** for this object.
9. Decide on a new **PLACE** to put this object.

Choose one:

A. I think I may change a few old habits.
B. This exercise was too stupid to do.
C. I renamed all the objects in the room yesterday.



UNABLE TO LABEL

Our society **LABELS** most everything! Although some labelling is convenient and even necessary, we oftentimes label things until we fail to see real **BEHAVIORS** and **DIFFERENCES.**

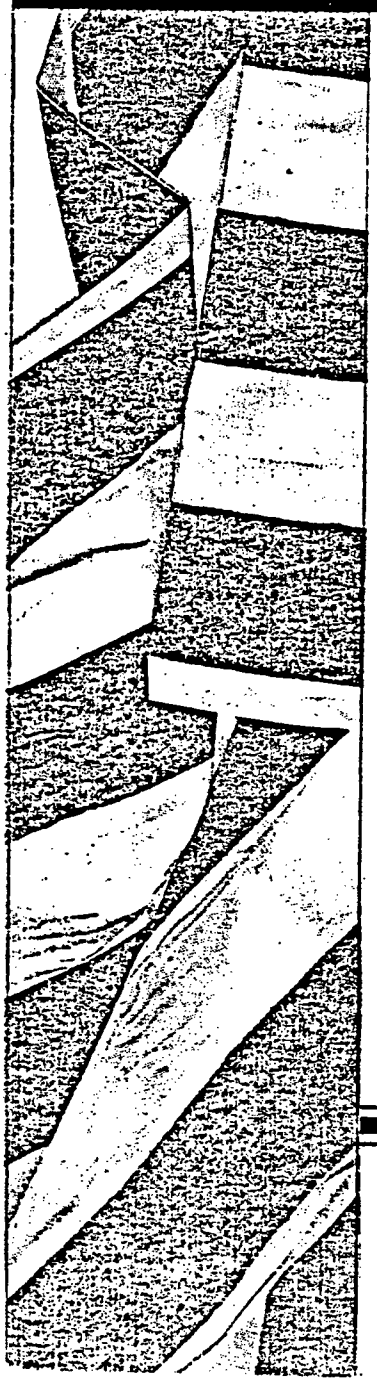
Try the following exercise:

1. Make a list of twenty **ADJECTIVES** that you think people use to describe you.
2. **TEAR** up the list.
3. Draw five pictures of the way you **SEE** and **FEEL** about yourself. Draw any detail that makes you **UNIQUE.**
4. Wear the **PICTURES** on your shirt for the rest of the day.

Pick one:

A. I do tend to label kids and now I'll try not to.
B. No one describes or talks about me.
C. This game made me nervous.

RELAXATION OR Sleeping on the Job *

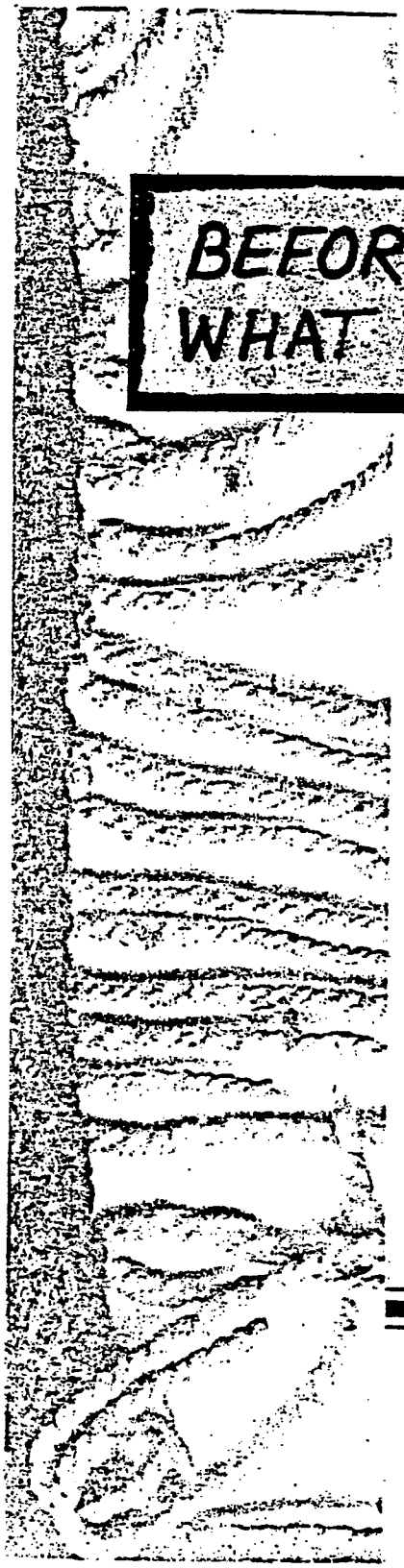


* Find an interested person to read these directions to you.

1. **CLOSE** your eyes.
2. Pretend there is a rolling pin **MOVING** up and down your back.
3. The rolling pin has round, wooden, raised **NUBS** on it.
4. The rolling pin is **GREEN**.
5. Now someone is putting a cool, **WET** towel on the back of your neck.
6. The towel is **AQUA BLUE**.
7. As your head falls back you smell warm, **CRUSTY**, soft bread being baked.
8. You **TASTE** the bread and feel it move up between your teeth.
9. The butter **OOZES** and runs down your chin.
10. Now you hear some running water.
11. The water is cool and **VIOLET** and falling from a blue rock into a pond.
12. You fall backwards into the pond and **FLOAT** away into a mound of **PILLOWS** and sleep.

Circle one:

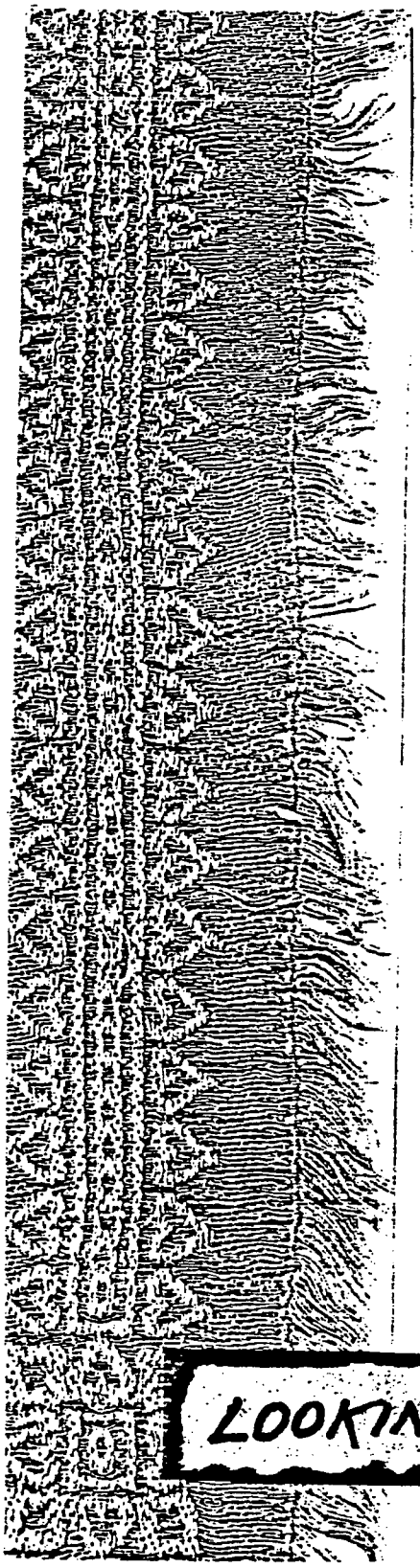
A. I feel more relaxed.
B. This was too silly for me to do.
C. I am asleep and cannot follow these instructions.



BEFORE YOU TEACH: WHAT TO LOOK FOR

It is the supreme art of the teacher to AWAKEN JOY in creative expression and knowledge.

Albert Einstein



LOOKING

It is important for the teacher to know what kind of **VISUAL RESPONSES** to encourage and what **VISUAL CLUES** to look for when teaching **CREATIVE THINKING.**

It is also important to be aware of certain **BEHAVIORS** that can indicate creativity.

The information, checklists, and examples on the following pages should help you to become a **BETTER OBSERVER** of creative thinking and should help you to know **WHAT TO LOOK FOR** in creative responses.

While it is difficult to be objective about creativity, research has discovered certain **COGNITIVE FACTORS** that seem related to creative output.

CREATIVITY COMPONENTS

It is these factors that the teacher should recognize so **POSITIVE CREATIVE RESPONSES** can be identified during the creative activities.

That is, if you can recognize the **CREATIVE COMPONENTS**, you will be able to spot creative responses from the students more easily.

The cognitive creative components of creativity that appear most consistently are:

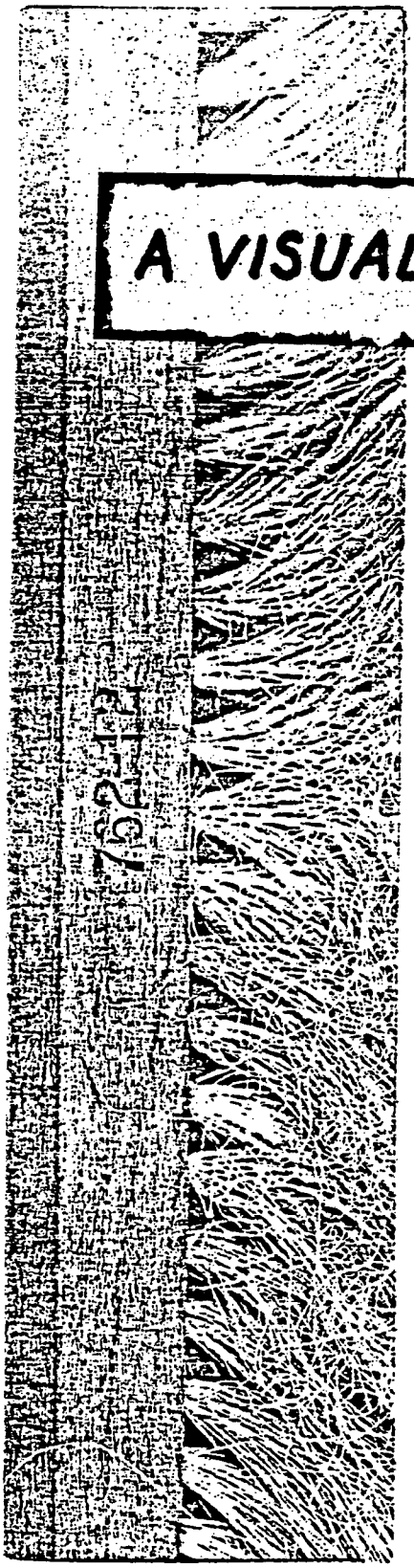
FLUENCY: The number or quantity of responses.

FLEXIBILITY: The variety of responses.

ORIGINALITY: The uniqueness of responses.

ELABORATION: Lines added that mean a new or significant detail.

It is these areas that the observer should look for and encourage.



Practice looking for these cognitive factors by taking a simple VISUAL TEST

A VISUAL TEST

Using the definitions of the four **CREATIVE COMPONENTS** and the copies of the two children's drawings, try to identify **FLEXIBILITY** and **ELABORATION** in the first drawing of the children on the hill, and **FLUENCY** and **ORIGINALITY** in the second drawing of the steering wheel.

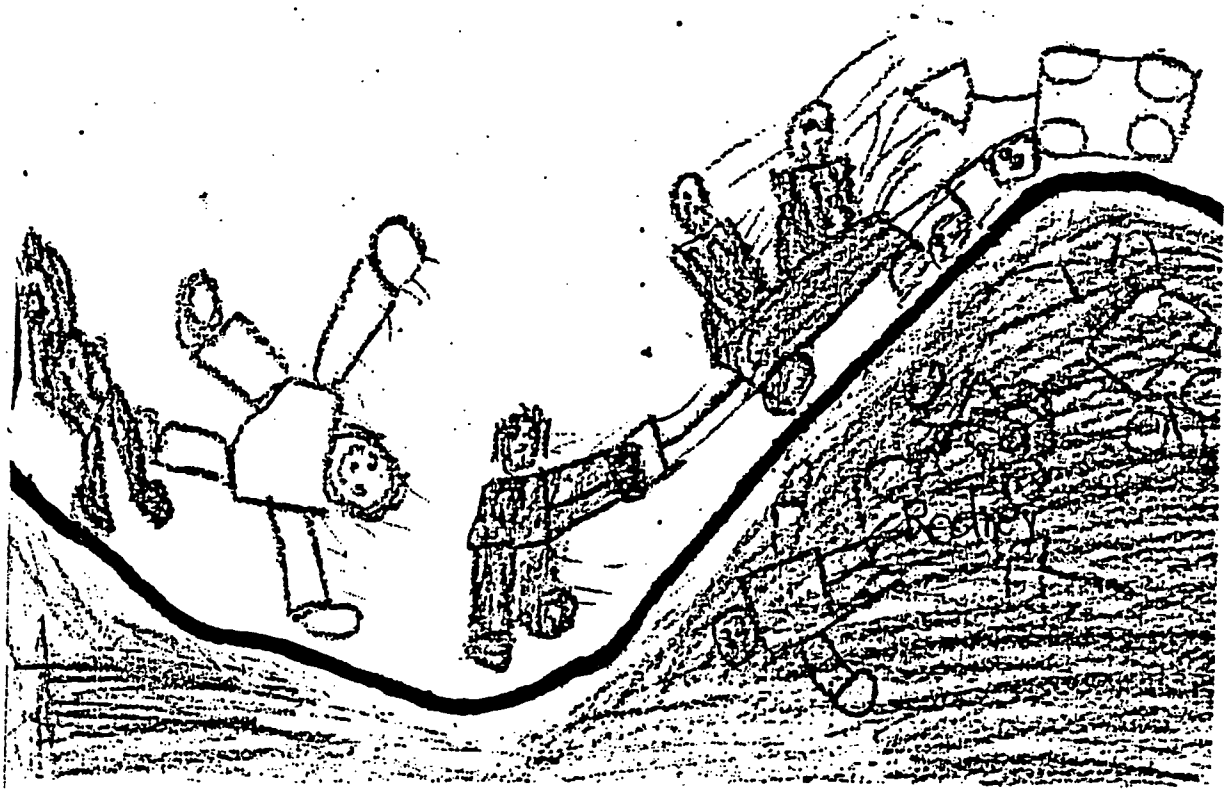
Both examples were done by Kindergarten children.

In the first drawing the child was given a piece of black yarn to help form a line or a picture.

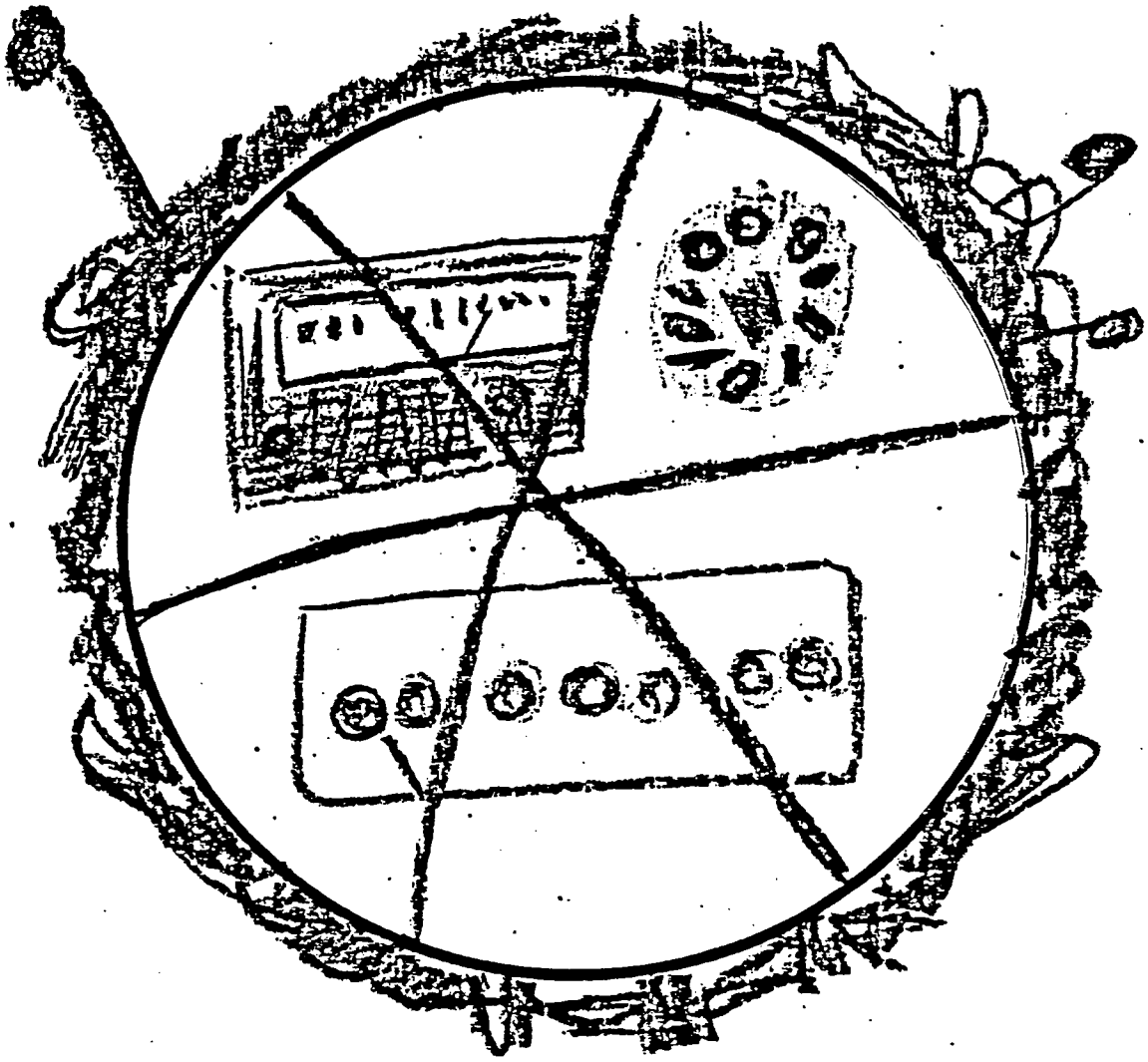
In the second drawing the child was given a circle and told to make a picture using the circle.

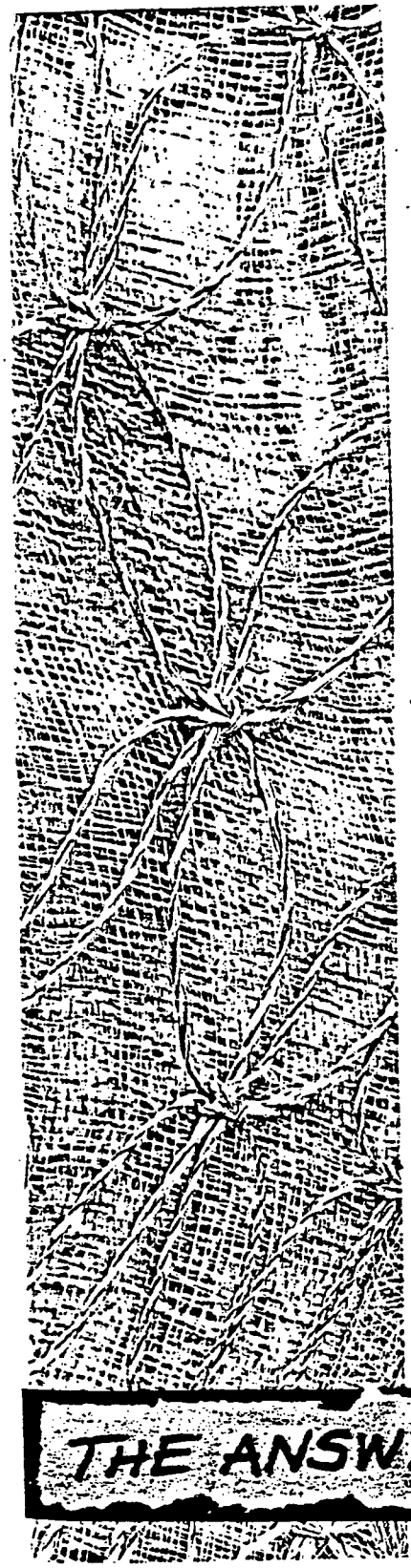
Now take the VISUAL TEST.

Why is this drawing a good example of FLEXIBILITY and ELABORATION?



Why is this drawing a good example of FLUENCY and ORIGINALITY?





THE ANSWERS

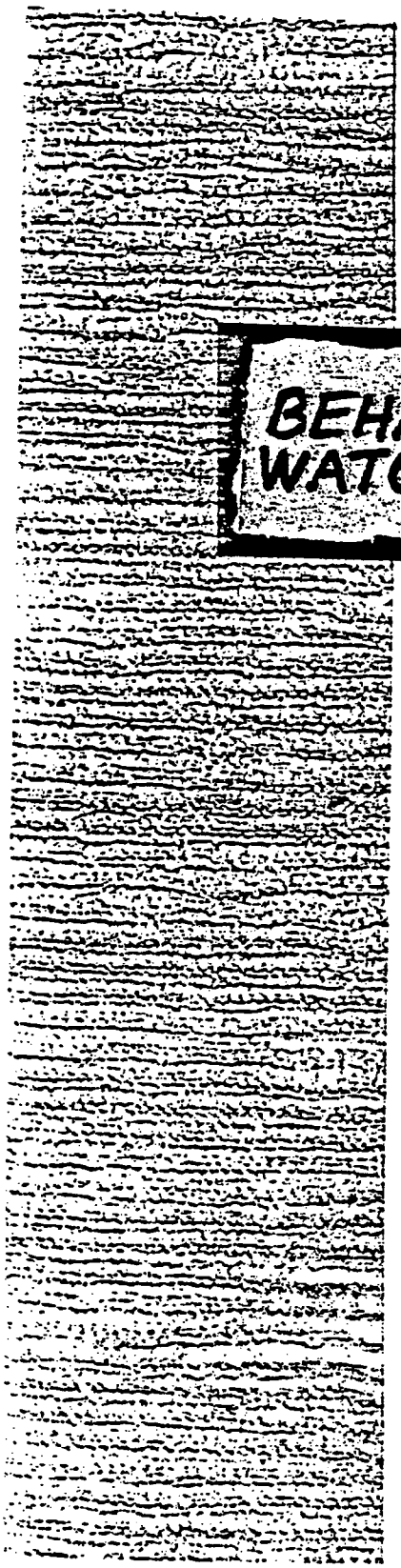
The first drawing is a good example of **FLEXIBILITY** because there are a **VARIETY** of responses on the line that the child made into a hill.

The child has drawn a child rolling down a hill, a child pulling two children in a wagon, a wagon tipped over, etc.

The first drawing is a good example of **ELABORATION** because there are many extra lines that add new detail; motion lines on the children in the wagon, lines to indicate a wagon handle, etc.

The second drawing is a good example of **FLUENCY** because there are **MANY** responses on the page including a gas gauge, shift sticks, wheel cover, etc.

The second drawing is a good example of **ORIGINALITY** because the child chose a unique use for the circle including "seeing through" the wheel. Most children tend to draw faces, suns, or other common circular shapes.



Knowing what to look for can also include
BEHAVIOR WATCHING.
The way a child responds to a creative activity can be an indicator of creative thinking.

BEHAVIOR WATCHING

It is nice to be able to tally up a score when we are used to working that way.

Try to **WATCH** each student and **NOTE** what behaviors are shown. The checklists on the pages that follow can serve as a guide. Space is provided to add other behaviors or comments you have.

It is hoped that
BEHAVIOR WATCHING
may prove a valuable indicator of creative thinking and the checklists that follow will aid you in identifying
CREATIVE ABILITY.

BEHAVIORS TO WATCH FOR DURING THE ACTIVITY

Instructions: Fill in the blank with a "3" for yes, a "2" for sometimes, or a "1" for no.

	Yes	Sometimes	No
Was the child excited about working and thinking in an unusual way? Example: "Wow, this is something different! This is really crazy (or silly)!"	____	____	____
Could the child tolerate disorder and ambiguity?	____	____	____
Did the child work independently?	____	____	____
Did the child display humor or playfulness in the approach to the problem? Example: The student laughed at/enjoyed the drawings or suggestions given.	____	____	____
Did the child stay with the task? Was the worksheet completed?	____	____	____
Did the child ask questions about the activity that you hadn't anticipated? Example: "Could we shut the lights off so I can pretend better?" or "Who drew these pictures, anyway?"	____	____	____
Was the child content that there were no grades given on the project?	____	____	____

Your comments about other behaviors that might indicate creativity:

TOTAL SCORE _____
(sum of all scores)

BEHAVIORS TO NOTE AFTER THE ACTIVITY

Instructions: Fill in the blank with a "3" for yes, a "2" for sometimes, or a "1" for no.

	Yes	Sometimes	No
Did the child request or use another medium to work with (other than the one offered by the instructor)? Example: "May I use watercolors for this worksheet? I think I can mix colors better."	___	___	___
Did the child find answers to questions by himself/herself? Example: "I need to call the butcher to see how much a cow weighs."	___	___	___
Did the child come up with a large number of ideas? (Fluency) Example: The student drew six drawings instead of one.	___	___	___
Did the child come up with varied ideas? (Flexibility) Example: The student's train of thought seemed to follow different paths (not always horses, for example).	___	___	___
Was the child willing to take risks? Example: Instead of asking "Is it okay if", he or she did the idea.	___	___	___
Did the child elaborate on the drawing or the idea? Were there many "extras" on the paper (comments or drawings in the margins, etc.)?	___	___	___
Did the child do something very unique with the worksheet? Example: Turn it upside down, make it into a boat, etc.	___	___	___
Did the child ask for more pages to do?	___	___	___

Your comments about other behaviors that might indicate creativity:

TOTAL SCORE _____
(sum of all scores)

NOW YOU ARE READY

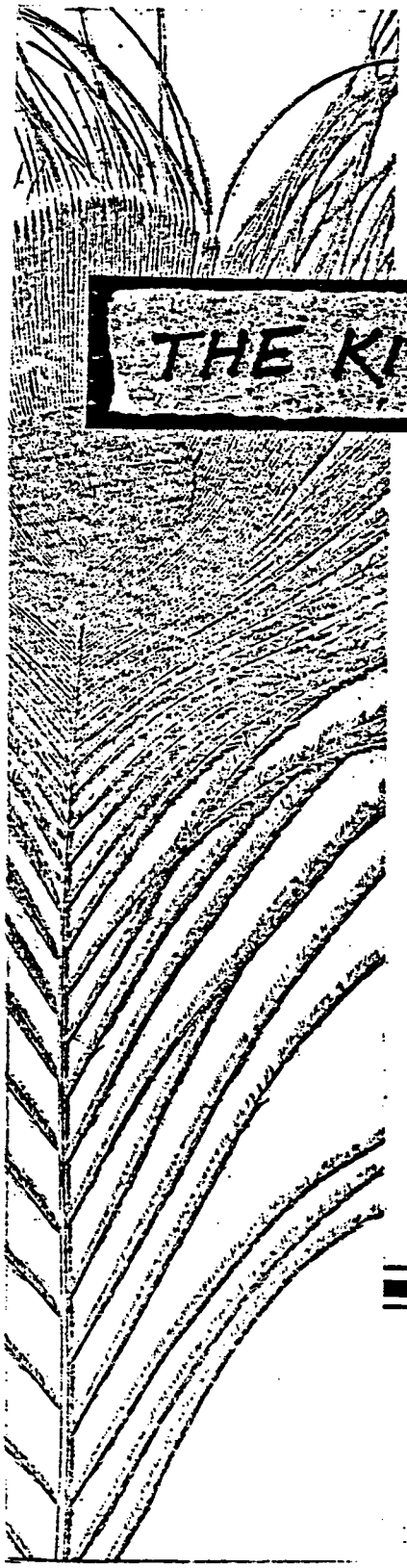
You have read what some INTERESTED persons have said about creativity and examined your ATTITUDE about the concept.

You have considered your CLASSROOM ENVIRONMENT and thought about your APPROACH as a teacher.

You have looked at some ACTION WORDS that can be used in the introduction of creative activities and perhaps learned how to RELAX and CHANGE some old habits.

You have examined what to look for both in VISUAL RESPONSE and BEHAVIOR.

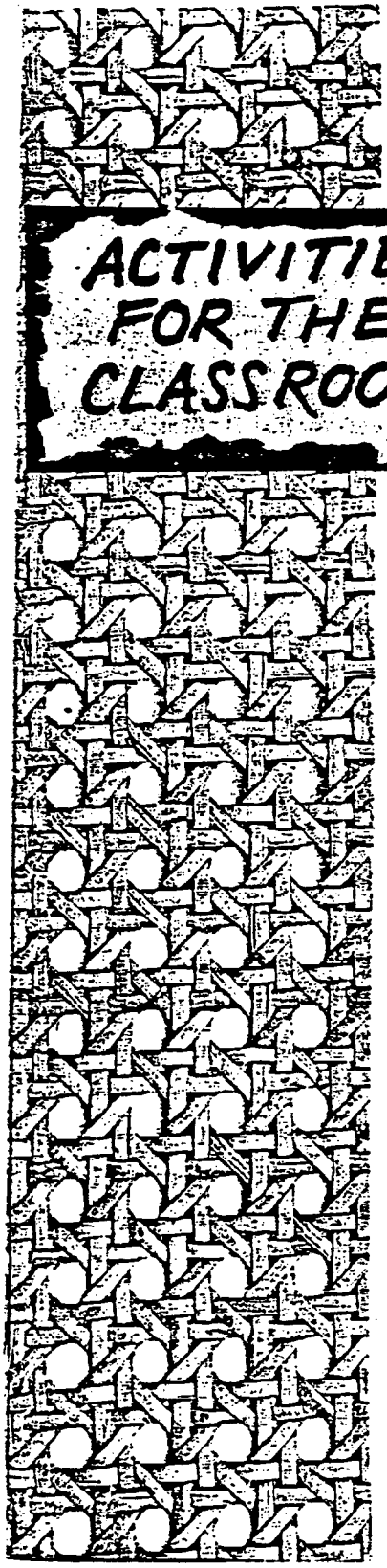
NOW YOU ARE READY to introduce some playful and unusual activities that encourage CREATIVE THINKING and join the children in the exciting art of CREATING.



THE KID'S STUFF

You can do anything
with CHILDREN
if you only PLAY
with them.

BISMARCK



ACTIVITIES FOR THE CLASSROOM

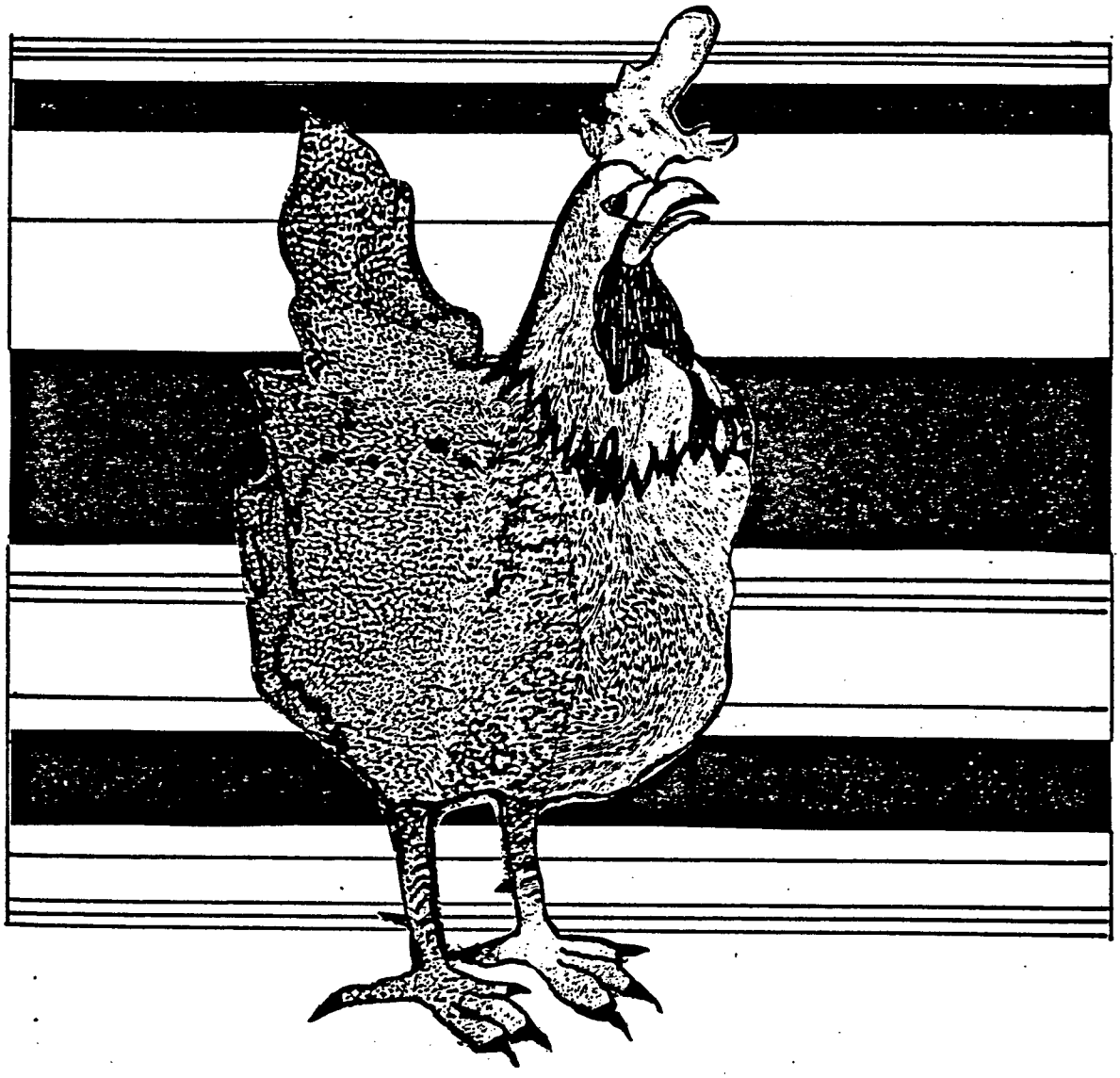
The activities on the following pages are designed to **PROMOTE** **ENCOURAGE** creative thinking.

Each set of activities is preceded by a drawing or picture. This picture can be used as a **PULL OUT** page to be reproduced for the children to draw on, as a **POSTER** to be displayed, or simply as a **VISUAL MOTIVATOR.**

The **MOTIVATIONS** or activities that follow each picture can be used in **INDEPENDENT** situations, **CLASSROOM** projects, or to **COMPLIMENT** a specific subject area.

The activities usually contain one idea that is considered a **REAL PROBLEM** activity. These are particularly successful with gifted and talented students.

Most of all it is hoped that the motivations and visuals will yield **JOYFUL EXPERIENCES** that creative thinking can bring.

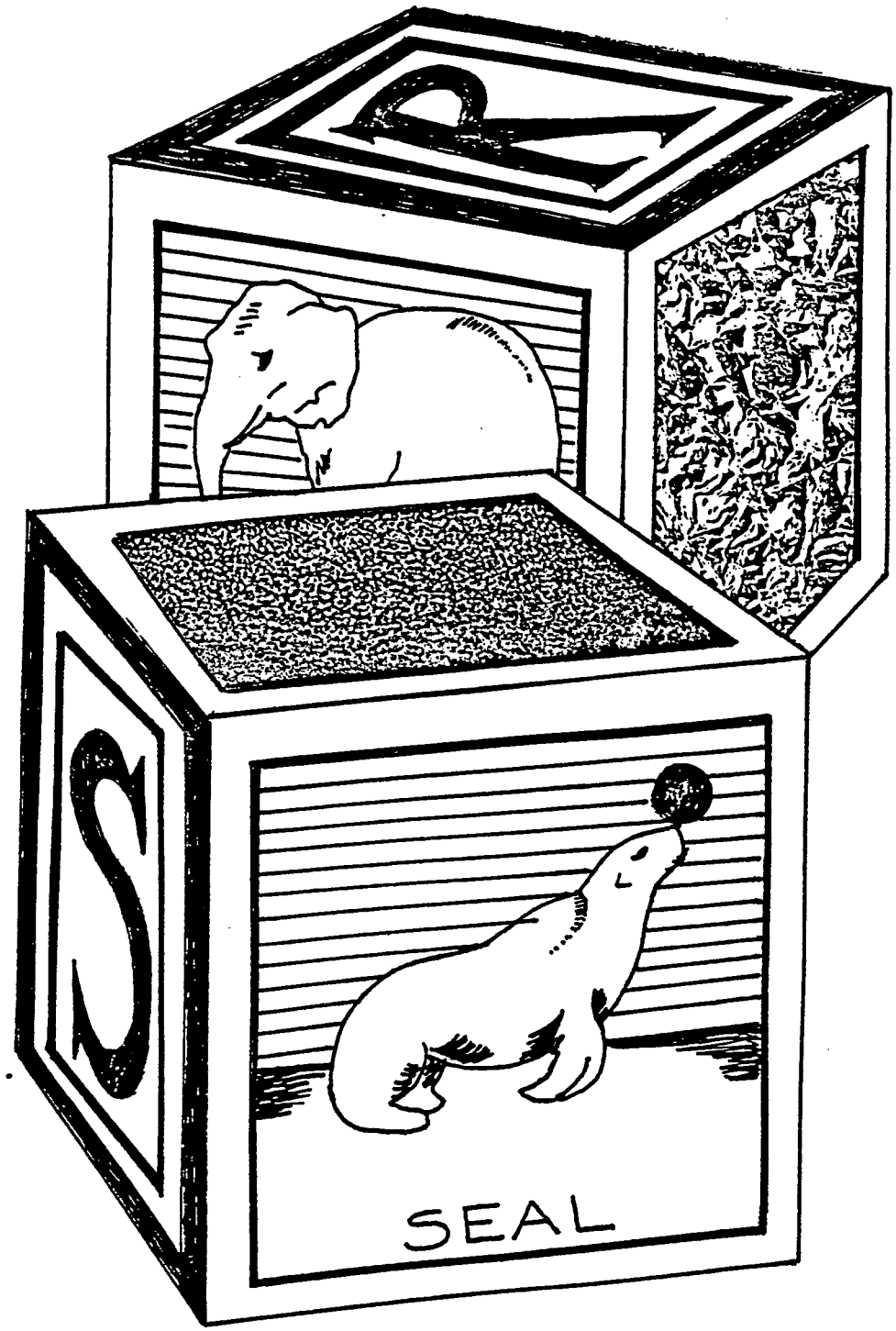


MOTIVATIONS

BRAINSTORM all the places that one might see a **CHICKEN:**
weathervanes, barn, crossing the road, etc.
Using the visual as a pull-out page, finish the drawing in an **ORIGINAL** way.

IMAGINE that this chicken is a new **PET.** Design living quarters for this pet so that it will be happy living in the city.

INVENT a comic strip using a chicken as a hero. Develop the plot and draw the comic strip in at least four boxes. Title the comic strip and put it in the **SCHOOL PAPER.** **ELABORATE** on the original idea the following week by adding a new character to the comic strip.


S
SEAL

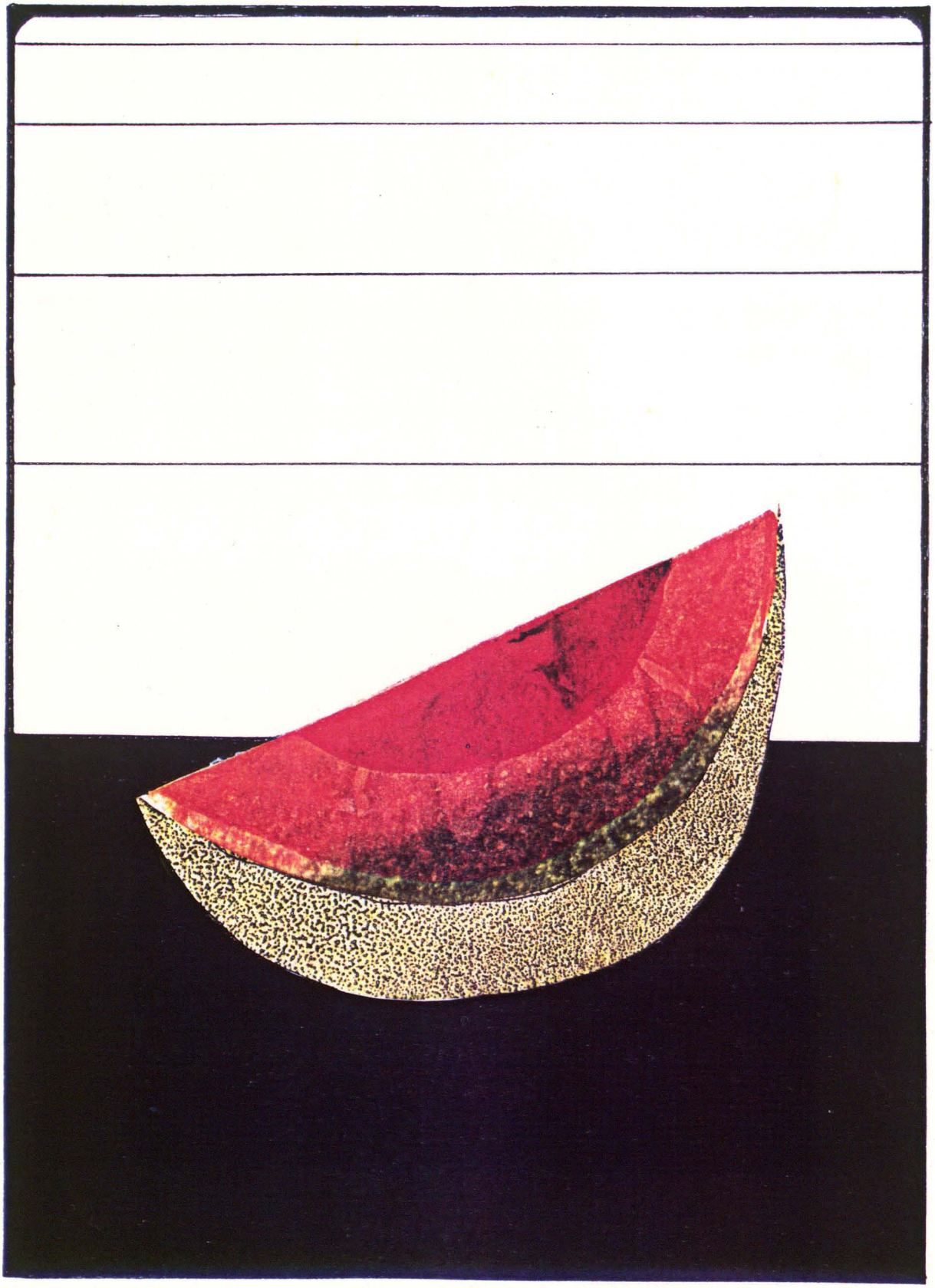
MOTIVATIONS

Most wood blocks are designed with pictures or letters on them.
DESIGN a new block by first constructing a 3-D shape from cardboard and adding the visual design on each side using only self portraits depicting moods on 6 days of the week.

Make a **LIST** of things that are cubes: dice, sugar cubes, etc. Pick one item and change its shape (by drawing it) for a good reason.

Have a block-stacking **CONTEST**.

As a class project, **CONSTRUCT** a large block or cube that can be crawled into.
DESIGN each side of the block to convey a certain **MOOD**. Have the large block become a moody learning center to get away from it all.



MOTIVATIONS

this is a border this is a border this is a border this is a border this is a border this is a border

Bring two fruits to the classroom. List all the ways that the fruits are the same. List all the ways the fruits are different. (Be sure to **TASTE**, **TOUCH**, and **SMELL** to make these decisions.)
IMAGINE combining these two fruits into a new fruit.
DRAW it, **LIST** its characteristics, and give it a **name**.

Bring a cantaloupe (or other round fruit) to class. As a group decide 5 different ways to cut the fruit to make 6 equal parts.

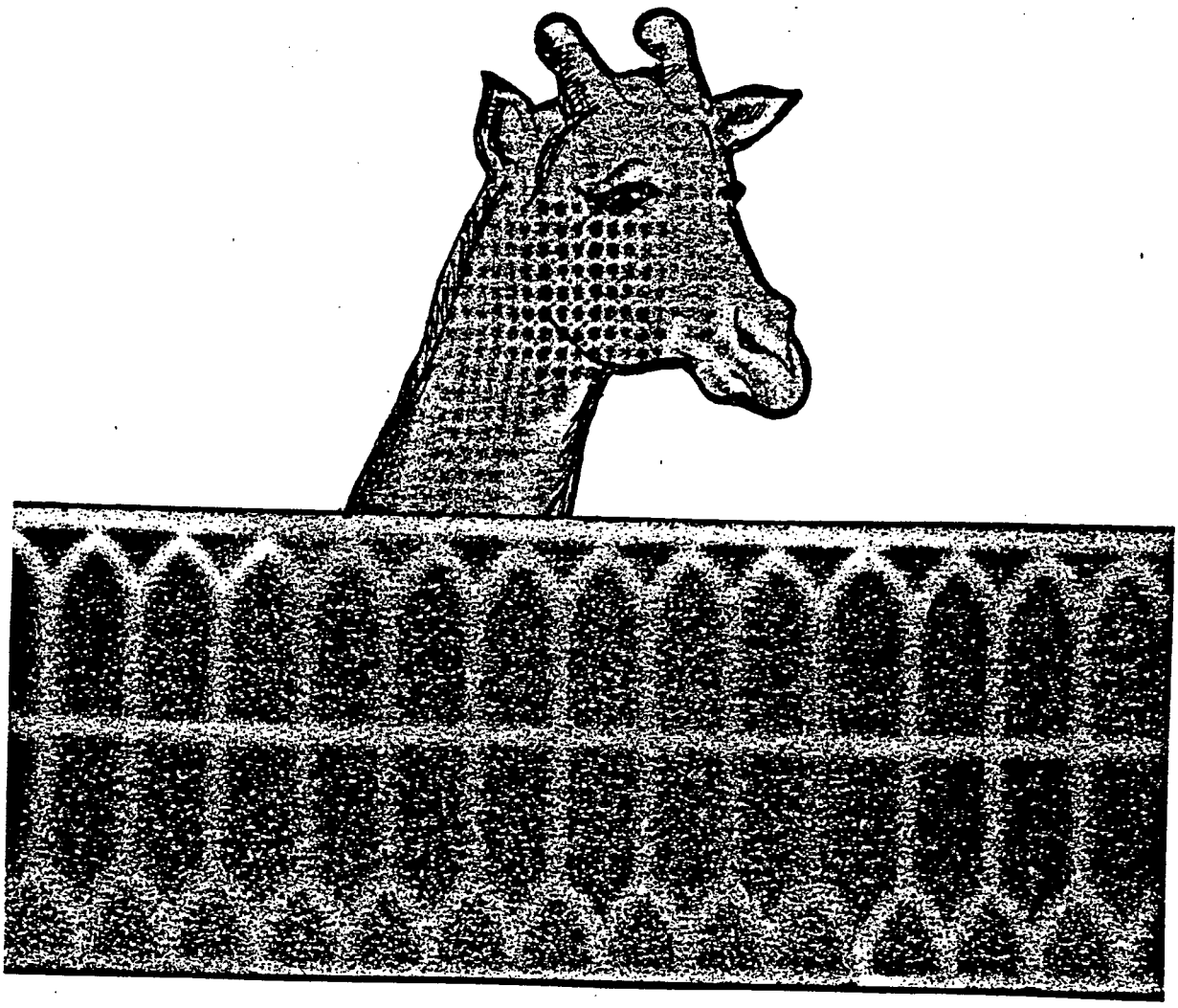
IMAGINE that you are a cantaloupe grower. You want to raise the price of cantaloupe and are starting a fast-food restaurant featuring that fruit. Make a **LIST** of all the ways you could serve cantaloupe and prices. **DESIGN** the fast-food restaurant considering color, theme, and audience. Build a scale model of the restaurant using cardboard, papier mache, paint, etc.

MOTIVATIONS

Oftentimes we have a very short time to make decisions. Have the children **IMAGINE** this possibility: You are feeding your pet fish and it jumps out of the acquarium into your shoe. Write the very first thought that enters your mind. Now **DRAW** a picture of your Mother if she had been watching you.

Most fishing poles are designed about the same way. **DESIGN** a fishing pole that could catch more than one fish at a time. Sketch your idea with pencil.

PRETEND you are swimming in the ocean with equipment so you can see beneath the ocean floor. Using watercolor paints draw what you see.

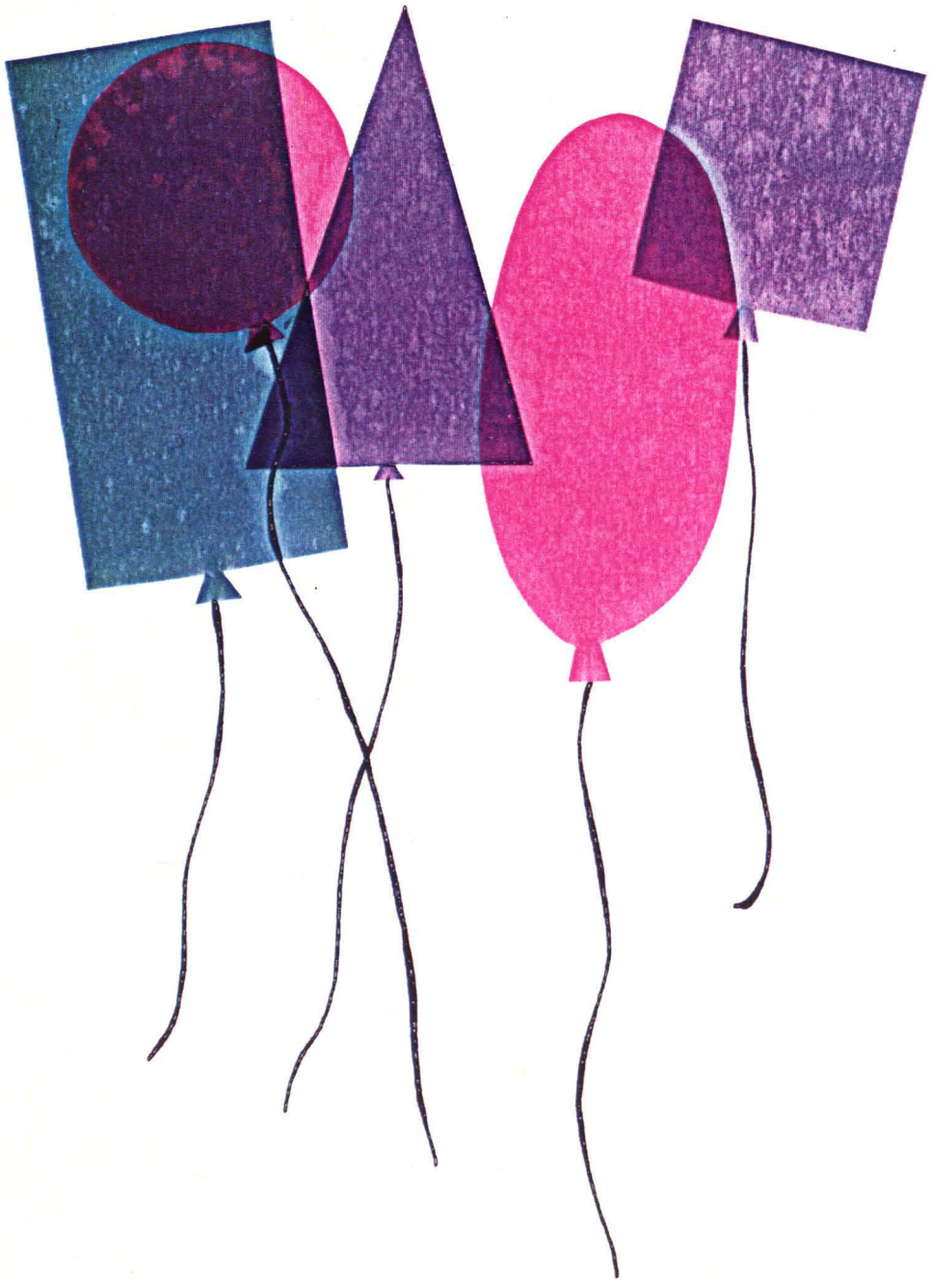


MOTIVATIONS

Using the giraffe page as a pull-out, **BRAINSTORM** possibilities to finish the page. Have the child complete the page in an unusual way and title the composition.

DISCUSS all the different **SOUNDS** that zoo animals make. How do these sounds fit the needs of these animals? Assign each child to be an animal. Have the youngster **INVENT** a new sound for that animal and why it is an appropriate sound.

Take a trip to the zoo. Have each child carry a notebook and **SKETCH** the patterns of the fur or skin of five animals. When the children return to the classroom, have them **DESIGN** an article of clothing or household item using one or all of the patterns sketched.



MOTIVATIONS

Using the balloon visual as a pull-out page, DRAW what could be holding on to each balloon.

Give each child a balloon and markers. Have each child blow up the balloon and design the balloon to indicate where he or she would like to FLOAT or FLY.

DESIGN a new shape. BRAINSTORM uses for the shape.

As a classroom project, have each child write their name, address, and other interesting information on a small piece of paper. Put the message inside a balloon and fill with helium. On a day when the WIND is COÖPERATIVE, allow the balloons to float FREE. Wait for responses. Plot the path of the balloons, speed, etc. from the information received.

MOTIVATIONS

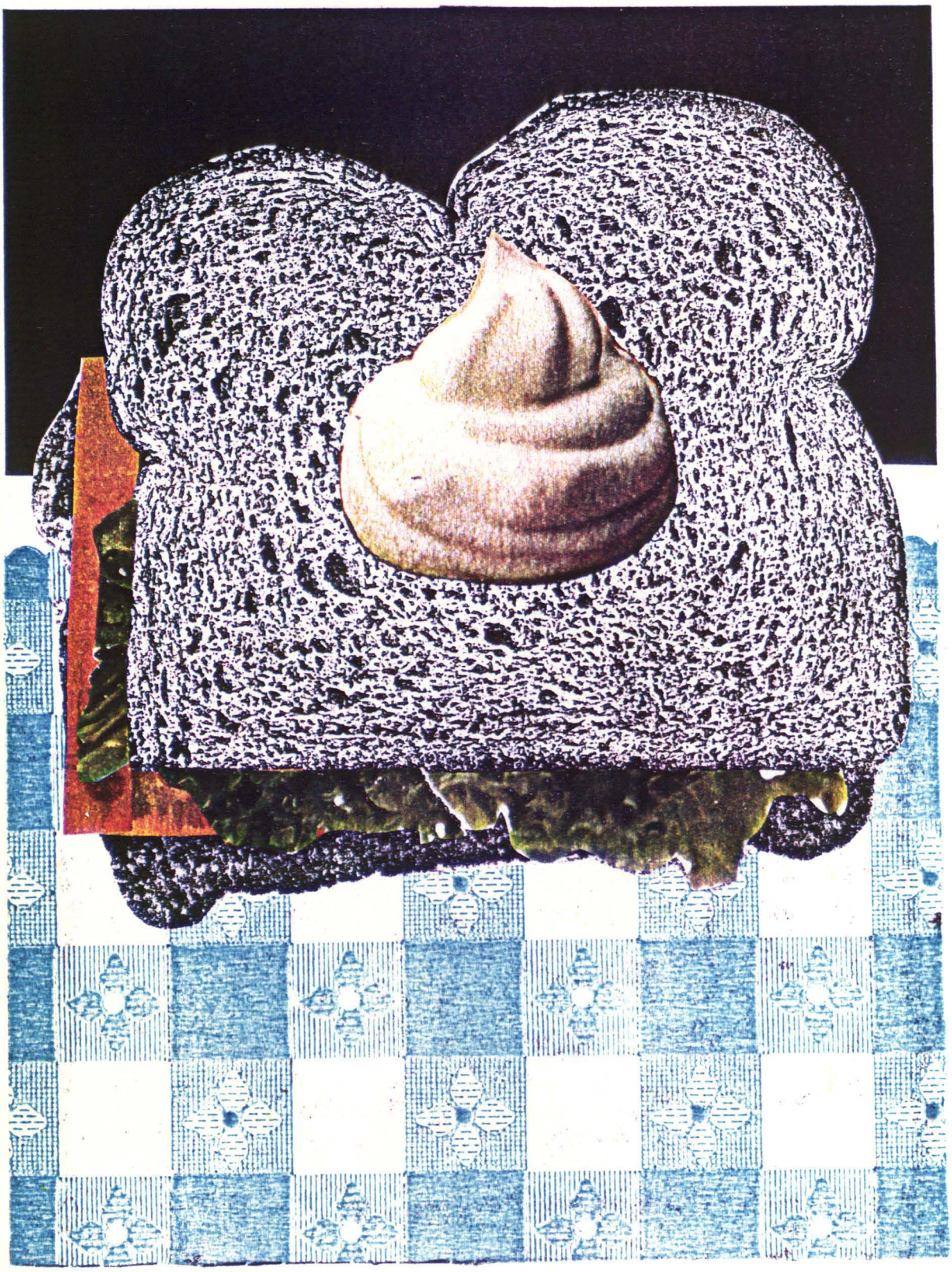
READ the book Where the Wild Things Are by Maurice Sendak. Talk about wild dreams, thoughts, experiences. **SPECULATE** why the mind imagines. Have the children

CREATE a wild thing using only colored chalk and black paper.

DISCUSS any current T.V. or motion picture monster. Changing the monster's personality to be opposite of its usual portrayal, write a story or create a visual picture about the new monster.

★ Have a "monster in me" dress-up day. Hold a contest for the best dressed monster.

ENCOURAGE costumes with moving parts, batteries, unusual materials. Of course, all costumes must be designed and constructed by the child.



MOTIVATIONS

DISCUSS the word "sandwich" and its origin. (Earl of Sandwich, etc.) List some common sandwiches (and some uncommon ones) and CATEGORIZE them.

EVALUATE the fast-food sandwich business and advertisements used to promote these establishments. LIST what makes some restaurants more successful than others. CREATE an advertising campaign for a new kind of sandwich to be used within a particular fast-food chain.

Bring a picnic basket full of food items not usually used in sandwiches. BRAINSTORM sandwich ideas with the class. CONSTRUCT a sandwich from the ingredients, taste it, rate it, and decide if it is good enough to be put on the school menu. (This may require input from the food service personnel.)

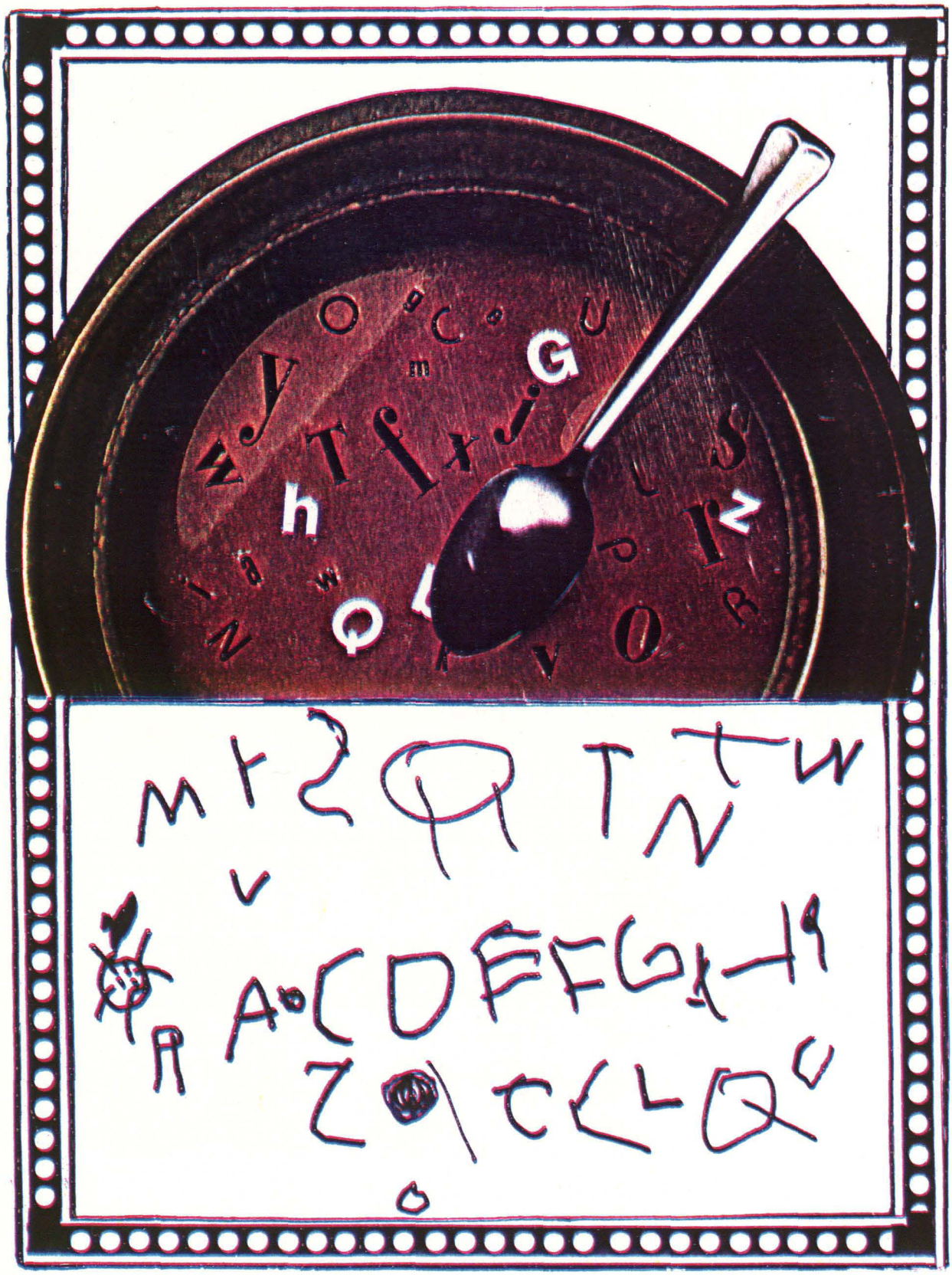
Campbell's
CONDENSED
cream of
mélaphor
SOUP

MOTIVATIONS

The world is connected by **VISUAL METAPHORS.** Help the children to see similarities in visual shape and implied purpose between things in nature and the man-made world. (for example: the grass covering the earth and a warm blanket.) Have the children cut out or draw some visual metaphors.

Have the children pick a favorite book title from the library. Using only colored paints have them **ILLUSTRATE** the book title using only color, (with no recognizable picture.)

"Write" a visual metaphor poem using only pictures that have been drawn or cut out. Make the visual poem into a booklet and **PRESENT** it to the school librarian to be catelogued.



MOTIVATIONS

EXPLAIN how the present day alphabet developed. After drawing the alphabet on the blackboard, erase one small part of each letter and examine how visually the alphabet is merely lines put together.

WRITE messages to each other using the code created.

Have each child pick a favorite letter in the alphabet. Using this letter as a design motif, repeat it, change its size, add to it, etc. to **CREATE** a composition.

Using only colors, create a new alphabet. (a red dot = A; 2 green dots = B; 1 blue dot = C; etc.)

TRANSLATE the school lunch menu using the color code.

What advantages does color coding have?

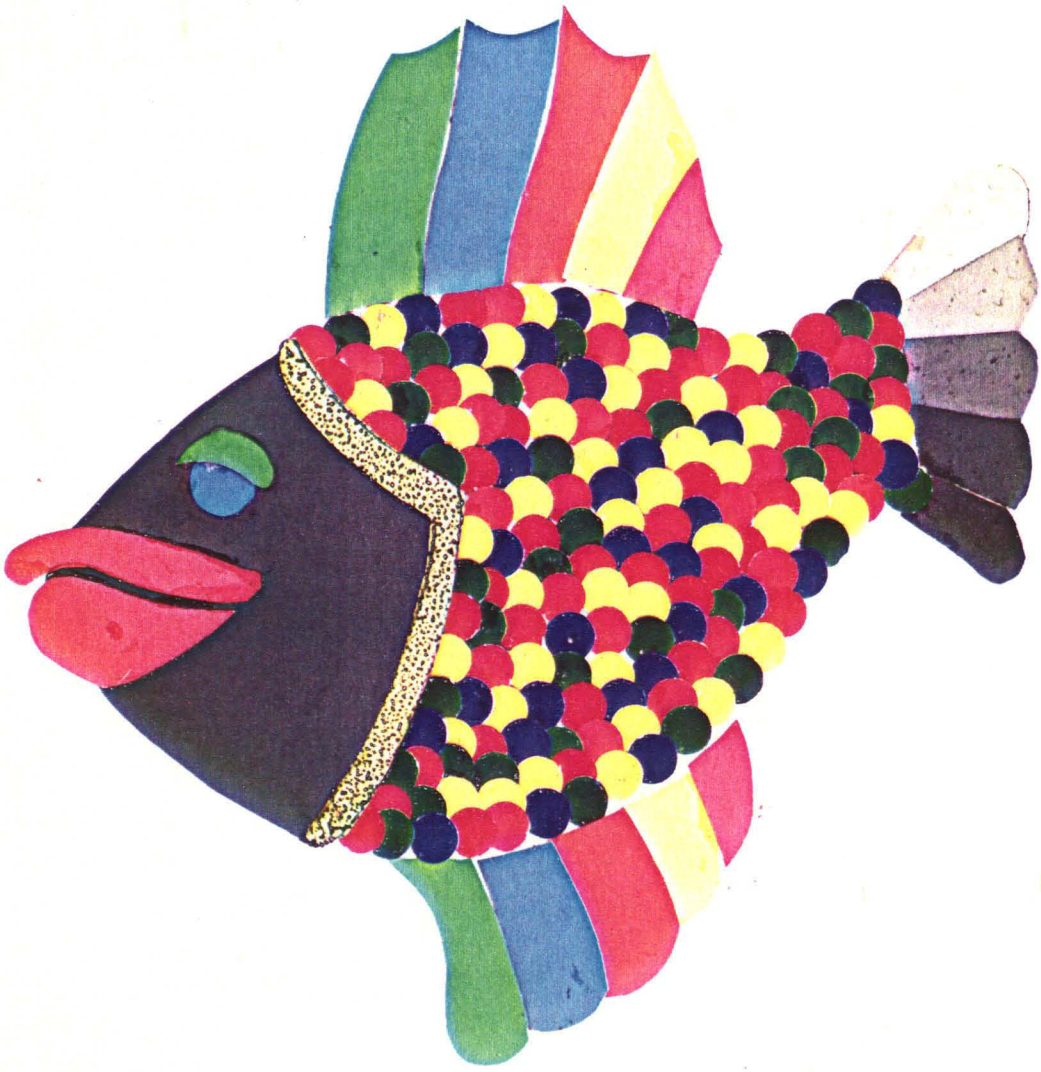

THE ZOO

MOTIVATIONS

Help the students invent a school lunch that everyone would find interesting. Have the students consider other **POINTS of VIEW** of people concerned with lunch: Mothers, school board, cooks, etc. Remind them to also consider what **ENVIRONMENT** would be interesting to eat lunch in. Draw the school lunch in its environment.

→ Obtain the school lunch menu. Design visual menus to be printed and distributed to the **HUNGRY** student body.

★ Bring the following ingredients to class: oatmeal, peanut butter, dried fruit, peanuts, dry cereals, coconut, raisins. Divide the class into four groups. Assign each group to **INVENT** a cookie recipe using the ingredients. The group must then **PREPARE** the new cookie and give it a name. Select a panel of judges to decide which **CREATION** is best.

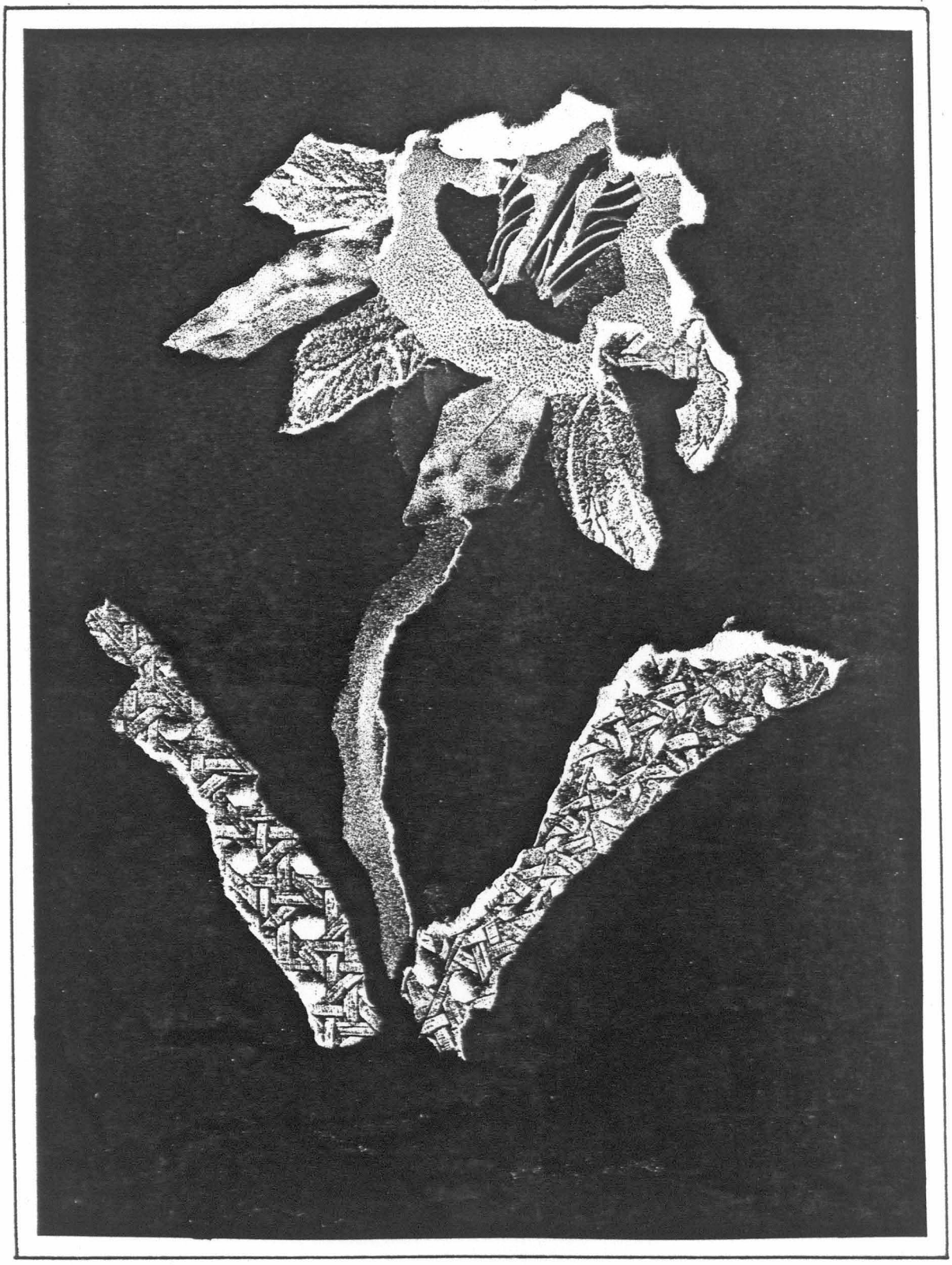


MOTIVATIONS

Many children have acquariums. **PRETEND** that rectangular acquariums are no longer allowed in this country. Assign the students the task of designing an acquarium with a new shape suitable for the average home.

CHOOSE a color. Write ten words that are often associated with that color. (for example: yellow; banana, daisy, egg yolk, cowardly, etc.) Write and illustrate a poem using the ten words.

To illustrate the **MAGIC** of color mixing, bring plain white frosting to class. Divide it into three parts and add food coloring to make the three primary colors. Mix the primaries to make the secondary colors. Next, **INVENT** a new color by mixing four or more of the primaries and secondaries. Give the new color a name, spread it on crackers, and eat it.

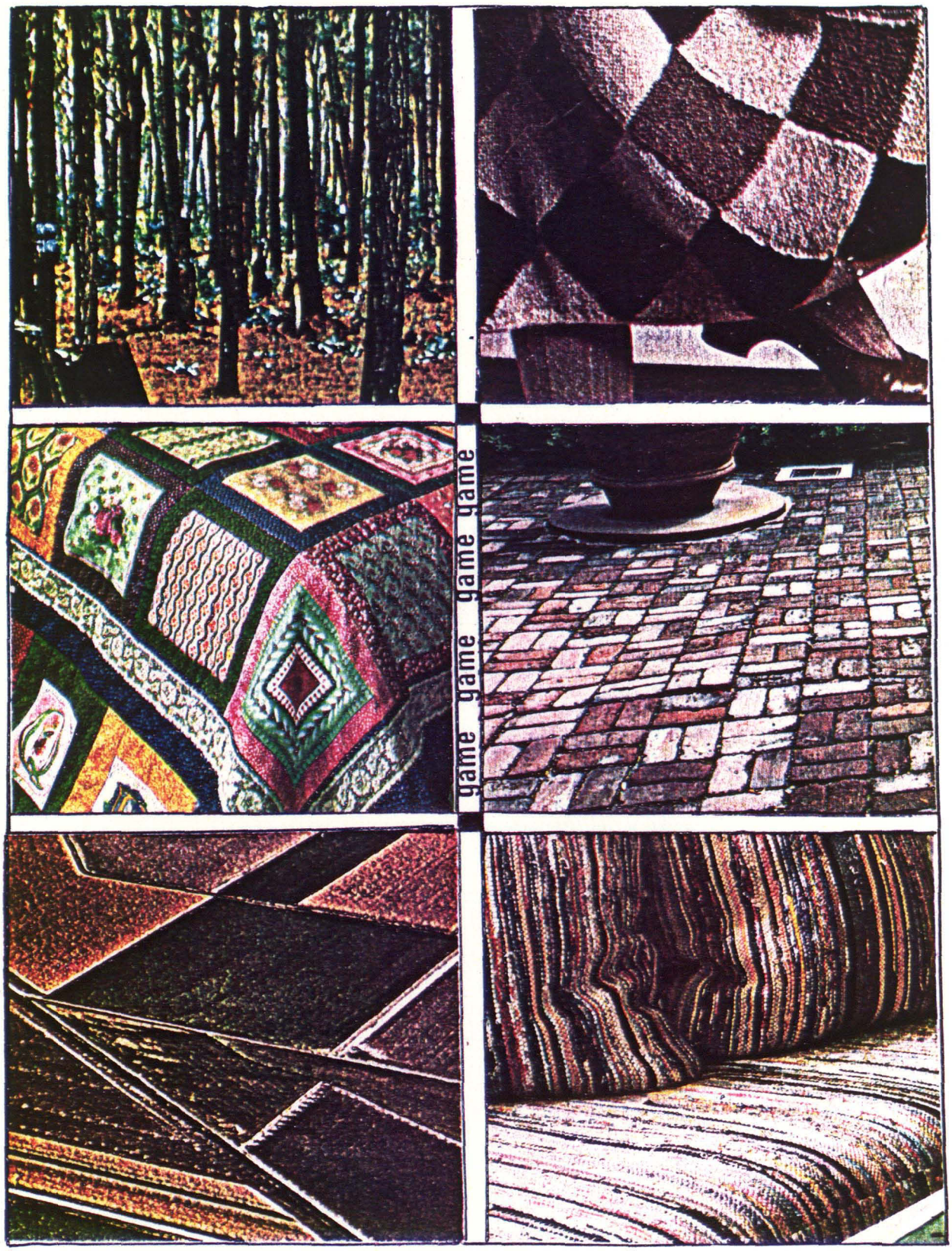


MOTIVATIONS

- Bring a variety of seeds to class in the original packets. Discuss what is inside a seed that makes it grow to look like the picture on the packet. Now **IMAGINE** a new seed. Enlarge the imaginary seed on paper and draw some interesting beginnings inside it. Next, draw the results if the seed were planted. Does the plant contain clues or similar designs from the seed?

- Assign the children to **DRAW** a picture of their body with all the insides in it. Label the parts.

- Have each child design a new plant container within the limits of the materials given them: A milk carton, two styrofoam cups, three straws, a McDonald's hamburger container, two paper plates.
  Before beginning, review the factors that make a plant grow. **ANALYZE** the containers presently on the market and **BRAINSTORM** new possibilities. Introduce the words RESEARCH and VARIABLE.
  Plant seeds in the containers and **CHART** the growth rate and success of the containers.


game game game game

MOTIVATIONS

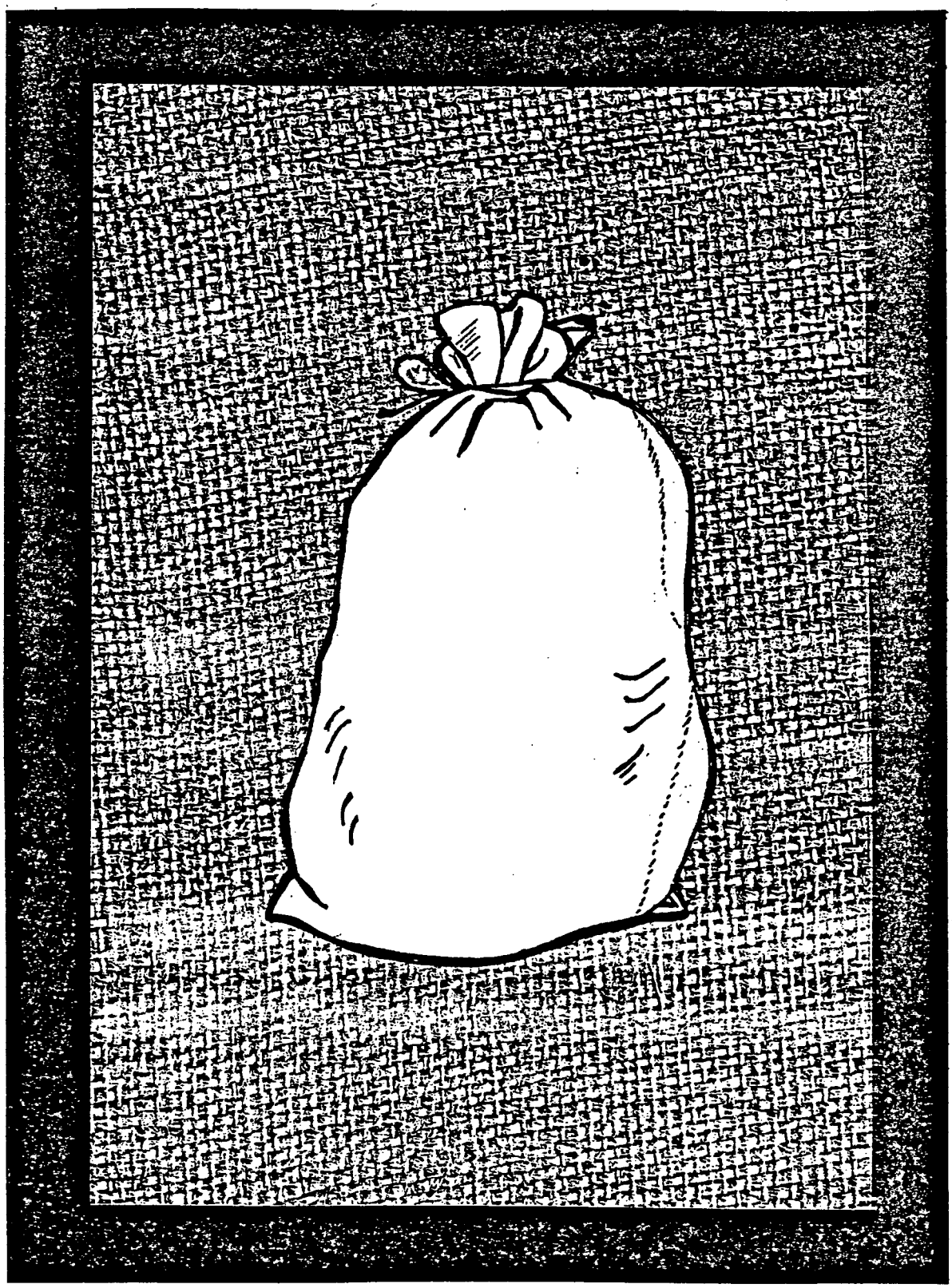
Explain the importance of seeing **VISUAL** comparisons. Using the preceding page, try to match the man-made fabric with the visual inspiration. Discuss where ideas come from. Using magazine cut-outs make more visual comparisons.

Assign each child to bring an object from nature. (stick, leaf, insect, etc.) Using watercolor paints, **MATCH** every color that can be seen on the item.

DISCUSS the components of a game: It must have a purpose or goal, playing area, rules, etc.
Give each child the following:

- 4 paper clips
- 2 plastic cups
- 3 paper plates
- 2 feet of string
- 2 rubber bands

The assignment is to **INVENT** a new game. Be sure there is a set of directions to go with the game.



MOTIVATIONS

SUGGEST this possibility to the students:
If you only had five minutes to put your possessions in a bag, what would you choose?
DRAW the items in the bag.
Explain why the items chosen were so important.

A large bag was found moving on the playground. Using the drawing as a hand-out,
DRAW what could be in the moving bag.

As a classroom project fill a large bag full of non-perishable items that exemplify life at the present time. (Records, books, newspapers, T-shirt, toy, etc.)
PRESENT the bag to the school principal and request that it be locked up for two years. **IMAGINE** how life and trends will change. List some possible changes the future holds.

MOTIVATIONS

SING the song Someday, Little Children by Jeffrey Moss.

DISCUSS what the future might be like with "people living on the moon, no more sickness, and everyone living in peace and love." Have the children describe this kind of world visually with mixed media.

★ **WEAR** a cape to class and tell the children that you have a **POWER**. (For example: tell them you have a power that enables you to change everything you touch to chocolate chip cookies.) Help the children to **IMAGINE** that they have a power.

Using this power as a theme, have them write and illustrate a story describing:

- their power
- how they acquired the power
- when they first realized they had the power
- how they would use their power to help someone.

YOUR TURN

Has your imagination
THE GOUT
that it limps so?
EDMOND ROSTAND

The pages that follow are blank. It is YOUR TURN to begin to think of CREATIVE EXERCISES for you and your students.

As you get ideas COMPILE them in this chapter.

Before long, you too, will be creating as a WAY OF LIFE.

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Summary

The author has developed and designed an instructional instrument to teach creative thinking skills with an emphasis on providing the most conducive environment for teaching these skills. The teaching instrument was designed for the elementary teacher using visual motivators and art-related activities.

The author was influenced by many years of teaching experience in art and gifted classrooms in establishing the kind of book teachers would both need and use. The author was also influenced by the work of Robert McKim and Joseph Renzulli in designing the teacher games and real world problems for children, and by the research cited in this thesis dealing with the instructional environment.

CHAPTER IV. CONCLUSION

The purpose of this thesis was to design an instructional instrument to teach creativity to children that considered the learning environment in its approach. The instructional instrument was based on a review of the literature dealing with creativity and the importance of the learning environment in teaching this concept.

The first part of the review of the literature covered some components and definitions of creativity and established the definition to be used for the purpose of the study. The second part of the review of the literature established the link between creativity and gifted and talented education and stressed the importance of creative thinking skills for this audience. The third part of the review of the literature covered research into the best possible learning environment in which to teach creative thinking. The learning environment was limited to include the physical, psychological/social, and instructional aspects of the environment present in the classroom.

The research suggested that an open classroom was superior to a traditional classroom in developing creative thinking. A teacher style that was varied to fit the student's learning style and involved the student in planning activities

was suggested as being most conducive to creative thinking. It was also determined that a teacher must also know what to look for in creative behavior and the resulting product. The research also indicated that the physical environment must be flexible relative to the student's physical needs and individual space. The research supported the importance of an appropriate learning environment when teaching creative activities to youngsters.

The last portion of the review of the literature attempted to analyze current publications that deal with teaching creative thinking to children. The instructional materials that were listed identified the lack of concern for the learning environment within these materials.

An instructional instrument developed by the author was then introduced. First, the rationale for developing such an instrument was given. The author, through experience as a teacher, interviewing teachers, and looking at the kinds of books teachers actually used, designed a format that would appeal to the teacher with many subject areas and children to deal with and very little time. The format was planned to be non-threatening in approach and to be easily read and comprehended. The instrument not only contains creative activities for children, but also includes specific suggestions for establishing the most positive learning environment when teaching creative thinking skills.

The author chose to use art-related activities and visual motivators as a vehicle for creative thinking based on research done by E. Paul Torrance and from positive personal experience. The teacher game section of the instrument was influenced by the work of Robert McKim, and the Type III (real-world) activities in the creative activity section of the instrument was influenced by Joseph Renzulli's enrichment triad model for gifted children.

Many of the activities for children in the instructional instrument were classroom tested by the author in a public school classroom of gifted and talented children. Hopefully, the instructional instrument that was introduced in this thesis will fill the gap between the research on teaching creativity and the importance of the learning environment and the realities of teaching in the classroom.

Further study based on this thesis could include the measurement of creative thinking skills between groups of children that received instruction for and used the activities presented in the paper and children who did not receive instruction for and use the creative activities. Another area of research based on this study could involve a teacher opinion survey regarding the success of the teaching instrument presented in this paper and opinions regarding the instrument.

The instrument presented in this study could also be evaluated for its use and success at different grade levels.

A further study based on this thesis could include the rationale and development of a teaching-training model designed to develop an appropriate environment for creative thinking.

The author also suggests some other possible related studies in this area of research. One suggestion is the investigation of the effects of the home environment and creative thinking, especially in pre-school age children. A second suggestion could involve a study concerning measuring creative abilities from an artistic rather than the more common psychological approach. A third suggestion for further study would be to study the interest in creative thinking in the private sector of the business world and thus the demand from the community to include creative thinking skills in the public school curriculum.

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