

PAPER AS A VISUAL AND TACTILE ORGANIZATIONAL
MATERIAL FOR USE ON SCHOOLROOM
BULLETIN BOARDS

APPROVED:

Richard H. Ferry
Major Professor

Charles J. Cross
Minor Professor

Care. Stapp
Director of the Department of Art

Robert B. Toulouse
Dean of the Graduate School

PAPER AS A VISUAL AND TACTILE ORGANIZATIONAL
MATERIAL FOR USE ON SCHOOLROOM
BULLETIN BOARDS

THESIS

Presented to the Graduate Council of the
North Texas State University in Partial
Fulfillment of the Requirements

For the Degree of

MASTER OF ARTS

By

Alice Louise Rodgers, B. S.

Denton, Texas

August, 1964

TABLE OF CONTENTS

LIST OF TABLES	Page iv
LIST OF ILLUSTRATIONS	v
Chapter	
I. INTRODUCTION	1
Statement of the Problem	
Purpose of the Study	
Sources of Paper Used	
Scope of the Problem	
Procedure	
Limitations of the Problem	
II. DESCRIPTION OF THE BULLETIN BOARDS	8
Curricular Bulletin Boards	
Extra-curricular Bulletin Boards	
III. SUMMARY	39
Conclusions	
Recommendations	
APPENDIX	42
BIBLIOGRAPHY	45

LIST OF TABLES

Table	Page
I. Samples of Paper Used in Figure 1	9
II. Samples of Paper Used in Figure 2	11
III. Samples of Paper Used in Figure 3	12
IV. Samples of Paper Used in Figure 4	14
V. Samples of Paper Used in Figure 5	15
VI. Samples of Paper Used in Figure 6	17
VII. Samples of Paper Used in Figure 7	19
VIII. Samples of Paper Used in Figure 8	20
IX. Samples of Paper Used in Figure 9	24
X. Samples of Paper Used in Figure 10	25
XI. Samples of Paper Used in Figure 11	28
XII. Samples of Paper Used in Figure 12	30
XIII. Samples of Paper Used in Figure 13	32
XIV. Samples of Paper Used in Figure 14	34
XV. Samples of Paper Used in Figure 15	36
XVI. Samples of Paper Used in Figure 16	38

LIST OF ILLUSTRATIONS

Figure	Page
1. Social Studies, Indians	8
2. Social Studies, Hawaii	10
3. Arithmetic	12
4. Reading	13
5. Health, Brush Often	15
6. Health, Eat Fruit	17
7. Science	18
8. Spelling	20
9. Writing	23
10. Spanish Language	25
11. English Language	27
12. Welcome to School	29
13. Library Book Reading	32
14. Character Development	33
15. Halloween	35
16. Christmas	37

CHAPTER I

INTRODUCTION

Statement of the Problem

The purpose of this thesis is to show the useful characteristics of a wide variety of papers as applied to the preparation of a tactile and visual organization on a number of wallboards. It is hoped the wide variety of papers and techniques used will be inspirational to other teachers when creatively planning their own designs using paper as their art medium.

The words "bulletin board" as used in this thesis have reference to the papers used in making visual and tactile organization on various types of wallboards.

Paper is a substance that is so familiar that it is often taken for granted and neglected as an art medium. Although it is a familiar product, its use is generally limited in preparing bulletin boards to a few of the most common papers. Paper can be a difficult material with which to work if one is not familiar with the specific characteristics of the paper to be used. Because of their diverse characteristics many of the available papers are avoided.

Paper may be rough or smooth, heavy or light, thick or thin, strong or fragile, opaque or transparent, colored or non-colored, plain or patterned.

Some papers have, among their distinguishing characteristics, surfaces so nonporous that wax crayons and water soluble media cannot be used effectively on them. Others have such a porous surface that inks and other water soluble media are absorbed so readily that they run and are uncontrollable.

The characteristics of some papers are such that they may be folded or bent a number of times without adverse effects. Others may tear or crack when bent or folded.

Because of their weight, texture, or color, some papers stimulate the tactile and visual senses with a feeling of daintiness, delicateness or fragility. Others with a different weight, texture or color may stimulate these senses with a feeling of strength or ruggedness.

To demonstrate the use of various papers, sixteen bulletin boards, suitable for a fifth-grade classroom, were prepared. Each paper used was chosen because of special characteristics that made it the best choice for the specific area in which it was to be employed. The color, surface texture and finish, size and weight of each paper was taken into consideration before making a selection.

Purpose of the Study

This study was correlated with the Hurst-Euleless-Bedford, Texas School District, employing approximately 150 elementary school teachers. In this school district it was noticed that

most bulletin boards utilizing paper were of construction paper and manila paper. For the most part papers with special attributes such as coated, coated and calendered surfaces and gummed backed papers were ignored completely. This was also true of the numerous free or inexpensive papers that were available.

When questioned about the lack of variety in paper purchased for bulletin board use, it developed that some teachers were not aware of the existence of the many special art papers. Some teachers were reluctant to purchase papers with which they were not familiar. Some felt the papers with special attributes were too expensive but neither had they taken advantage of the free or inexpensive papers such as wallpaper, kraft paper, newspaper, and gift wrap paper in the construction of their classroom bulletin boards.

Sources of Paper Used

Since this thesis was correlated with the Hurst-Eules-Bedford School District of Texas, located in Tarrant County east of Fort Worth, it was decided to use papers available from catalogues of companies soliciting business from this school district and from local sources in the cities where the school district is located.

It was also decided to explore sources available in the nearby cities of North Richland Hills, Fort Worth, and Denton.

These sources included paper supply houses, art supply companies, variety stores, drug stores, and gift shops. It is felt that most communities will have one or more of these sources available where teachers may choose papers suitable for creating their own bulletin boards.

Scope of the Problem

In order to demonstrate the abilities of various selected and tested papers, sixteen bulletin boards appropriate for the fifth grade were prepared. It was felt this number was sufficient to demonstrate the use of enough papers that other teachers would be challenged by the results and desire to explore the possibilities of using paper as a bulletin board material. Thirty-three papers were used, including coated and uncoated papers, gummed and ungummed, solid colors and patterned papers, light, medium, and heavyweight papers. Some were expensive and rare as demonstrated by the use of Japanese handmade papers, and some were relatively inexpensive and very common, such as newspaper.

A table including samples of the paper used in each of the illustrated bulletin boards will be found following the description of each photograph.

Procedure

Each type of paper used was subjected to a series of tests to ascertain its characteristics before being used as

a bulletin board material. The paper was folded with the grain and against the grain to determine its resistance to breaking and cracking along the fold. Observations were made as to the neatness of the creases that were formed.

Each paper was tested by rolling it with and against the grain and observations made as to its ability to roll neatly and retain its shape in order to determine its suitability when necessary to form three-dimensional shapes on the bulletin boards.

Marks were made on the papers with wax crayons, oil crayons, water color and marking ink, to ascertain their compatibility with the papers. One observed property of all paper is its affinity for moisture, but when coated and super calendered to make it smooth and glossy, this characteristic is greatly reduced. As a result, super calendered papers such as enameled, flint, Potpourri and metallic papers were found to be incompatible with all the forementioned marking materials. Other papers, such as tissue papers, Origami, Juban, and Unryu absorbed the marking ink very rapidly, and it ran or soaked through them.

A sample of each paper was placed in direct sunlight for a period of fifteen hours to determine its resistance to fading. As a result, Origami papers, with the exception of metallic gold paper, were considered unsuitable for a bulletin board material because it faded very rapidly.

With scissors a cut was made in each type of paper and observations were made as to the ease and neatness of the cut along its edges. It was observed that all papers cut more easily and neatly with the grain than against the grain.

With the knowledge gained as a result of the testing, a series of bulletin boards suitable for the fifth grade were prepared using a paper whose characteristics had been found to be appropriate to its use. Those papers that faded rapidly were not used. When a design required that a paper be rolled, folded, or creased, those papers that had proven suitable when tested were used. Gift wrap papers and enameled papers with a moderate affinity for moisture were often used as background papers since this characteristic cause them to remain flat when used to cover a large area. Crepe paper was found to have such an affinity for moisture that it would have sagged if it had been used to cover a large area, so it was not used as a background material.

Some novelty paper products such as stars, serpentines, paper play-money and honeycomb shapes were used when it was felt they were appropriate to the subject of the bulletin board on which they were used.

In preparing the bulletin boards an attempt was made to make them suitable and appealing to children in the ten- to eleven-year-age group usually found in a fifth-grade class.

Principles of good design were applied with consideration to color harmony, balance and rhythm, relationship of the various parts to each other and to the background. After each bulletin board was completed it was carefully checked and any color or shape which seemed to be out of harmony or unsuitable was eliminated or replaced by a more suitable paper.

Limitations of the Problem

To keep the problem of the thesis from becoming too large it was decided to limit the subject matter of the bulletin boards to those suitable for use with a fifth-grade class.

Other limitations were those of the nature of the paper, such as its thickness, available size, and those limitations set as a result of the testing of the various papers.

The sizes of the wallboards on which the bulletin board designs were mounted also set limitations to the problem.

CHAPTER II

DESCRIPTION OF THE BULLETIN BOARDS

Sixteen bulletin boards were prepared. Eleven relate to the curriculum of the fifth grade and five to some of the extra-curricular activities for which teachers often desire or are required to prepare bulletin boards.

Curricular Bulletin Boards

Social studies of the fifth grade deal primarily with the history and geography of the United States.






Fig. 1--Social studies, Indians

In preparing the first bulletin board (Figure 1) it was decided to take advantage of a group of pictures depicting pre-Columbian life in the New World. These were mounted on pale-green cardboard.

To aid further in identifying the paper used in designing this bulletin board Table I was prepared.

TABLE I
SAMPLES OF PAPER USED
IN FIGURE 1

Sample		Name of Paper
	.....	Cardboard
	.....	Chiri
	.....	Construction
	.....	Design

The background paper selected was Chiri, a handmade Japanese paper. This paper is lightweight, tan in color, with crushed brown leaves incorporated into the paper.

The tepee motifs were made of brown construction paper, chosen because of its brown leather-like color and because it retained its shape when pinned to the bulletin board in a three-dimensional form.

The lettering was cut from yellow design paper. This is a coated paper of bond weight, colored on one side only.

Since the letters were to be glued down, it was felt that the lightweight and single-finished face of the paper was not detrimental to its use. This particular paper was chosen for its bright yellow matt finish, making the letters easy to read, thus avoiding glare.

The newest state in the United States, Hawaii, was chosen as the subject of the second bulletin board (Figure 2) which related to social studies.






Fig. 2--Social studies, Hawaii

The net was cut from brown crepe paper. The smaller letters were cut from gummed crepe paper, repeating the color and texture of the net.

The three fish and the sea snail are of honeycomb shapes in various sizes and colors with trimmings of flint paper.

To aid in identifying the paper used in preparing the social studies bulletin board on Hawaii pictured in Figure 2, Table II was made.

TABLE II
 SAMPLES OF PAPER USED
 IN FIGURE 2

Sample		Name of Paper
	.....	crepe
	.....	enameled
	.....	gift wrap
	.....	gummed crepe

The word Hawaii was cut from a gift wrap paper printed with a stylized tapa cloth pattern. These letters, as well as the smaller letters, were backed with tag board to give them added strength.

The background paper used for the arithmetic bulletin board (Figure 3) was a gift wrap paper. It was white with a brown embossed design.

Coated paper was used to cut the brown letters and numbers for this bulletin board. Yellow design paper was used for the other letters and numbers. Both of these papers were backed with tag board to give added strength and to prevent them from curling.

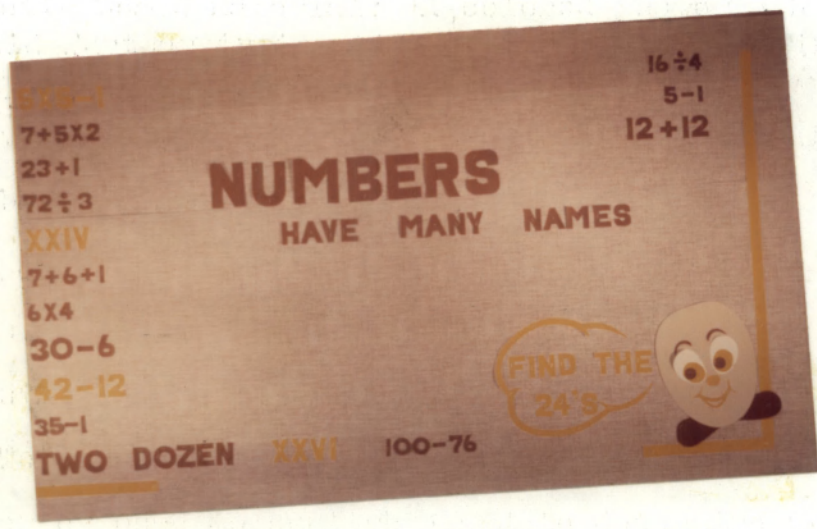


Fig. 3--Arithmetic

Table III was prepared to aid in identifying the paper used in Figure 3.

TABLE III
SAMPLES OF PAPER USED
IN FIGURE 3

Sample	Name of Paper
	coated
	design
	gift wrap
	Kiddie Kraft

The comic figure was cut from tan Kiddie Kraft paper. This is a lightweight tag board that comes in several colors. The features of the comic figure were made of the same papers used for the letters.

Figure 4, a bulletin board prepared on the subject of reading, has a background composed of sheets of newspaper chosen from the advertising section of the paper. This has a blended gray appearance when viewed from a distance.



Fig. 4--Reading



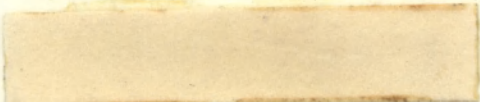
The hats are of black interwoven cover paper. This is a lightweight cardboard with the color incorporated into the paper so that it has the same appearance on both sides. Black flint paper was chosen for the hat bands because its shiny surface had the appearance of silk.

White velour paper was used for the rabbits since the flocked surface suggested rabbit's fur. Heavyweight velour,

about the thickness of lightweight cardboard, was used because the rabbits' faces were to be constructed three-dimensionally.

To aid in identifying the papers used in preparing the bulletin board pictured in Figure 4, Table IV was made.

TABLE IV
SAMPLES OF PAPER USED
IN FIGURE 4

Sample	Name of Paper
	cover
	flint
	newspaper
	velour

Two bulletin boards were prepared on the subject of health. The first (Figure 5) encourages the brushing of teeth.

A lightly textured, white paper tablecloth with pink stripes was used as a background material.

The teeth were made from white enameled paper and trimmed with black flint paper and with blue flint paper which has a similar surface finish as the enameled paper.



Fig. 5--Health, Brush Often

Table V was made to aid in identifying papers used in Figure 5.

TABLE V

SAMPLES OF PAPER USED
IN FIGURE 5

Sample

Name of
Paper

. corrugated



. enameled



. flint



. flint



. tablecloth

The toothbrush has "bristles" of white corrugated paper. The handle is blue flint paper, backed with blue cardboard for added strength.

The letters were cut from the same blue flint paper which was used on the handle of the brush and the white enameled paper was used for the teeth. Flint paper is lightweight and has a tendency to curl. All the letters were backed with blue cardboard to give them more body and to prevent them from curling.

The second bulletin board prepared on health (Figure 6) was titled "Eat Fruit."

Wallpaper, with a stylized design of fruit, was chosen for the background. The wallpaper was an almost neutral yellow with an all-over printed pattern of gray colored fruit. Details of the fruit were white lines. They were outlined in a deeper yellow than the background color which gave the fruit an appearance of being three dimensional.

White tag board was used to make fruit motifs which were placed in a composition on this bulletin board. They were formed by scoring and folding, by cutting and overlapping, or by bending and pinning into place, thus producing a three-dimensional composition.

The letters were cut from white tag board and yellow water color paper. The appearance of depth was achieved by the white tag board letters partially overlapping the letters cut from the yellow water color paper.



Fig. 6--Health, Eat Fruit

To aid in identifying the papers used in constructing the bulletin board pictured in Figure 6 Table VI was prepared.

TABLE VI

SAMPLES OF PAPER USED
IN FIGURE 6

Sample	Name of Paper
	. . . . . tag board
	. . . . . wallpaper
	. . . . . water color

A pale yellow enameled paper was used as the background for the science bulletin board (Figure 7).



Fig. 7--Science

The weather vane was cut from black interwoven cover paper.

The rain was made by cutting long thin strips from clear cellophane.

The sun was cut in three sections. The circle was orange-red fluorescent paper. Two shades of orange Fadeless paper were used for the pointed shapes.

The letters for this bulletin board were cut from the same black interwoven cover paper used for the weather vane.

To help identify the papers used in creating the science bulletin board picture in Figure 7, Table VII was prepared.

TABLE VII
 SAMPLES OF PAPER USED
 IN FIGURE 7

Sample	Name of Paper
	..... cellophane
	..... cover
	..... enameled
	..... Fadeless
	..... Fadeless
	..... fluorescent

Homonyms is one of the areas studied in spelling by the fifth grade. This was the theme chosen for the spelling bulletin board (Figure 8).

A bright yellow corrugated paper was chosen for the background.

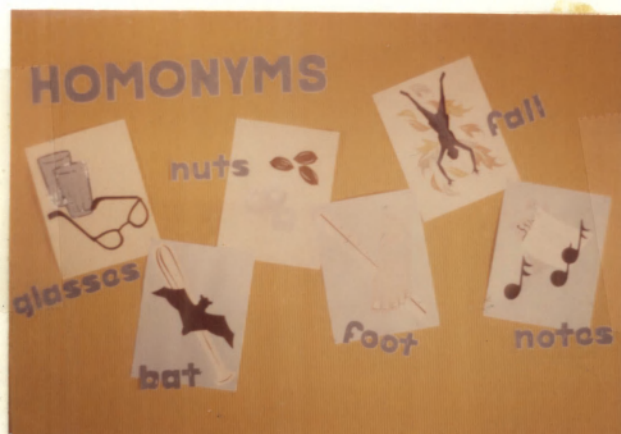


Fig. 8--Spelling

The designs were cut from gummed paper. Some metallic paper and gummed crepe paper were used when necessary to make it possible to distinguish between portions of the picture or to add color and texture. As an example, the texture of the nuts was created with gummed crepe paper.

Table VIII was prepared to help identify the papers used in Figure 8.

TABLE VIII

SAMPLES OF PAPER USED
IN FIGURE 8



Sample	Name of Paper
	..... corrugated
	..... gummed

TABLE VIII --Continued






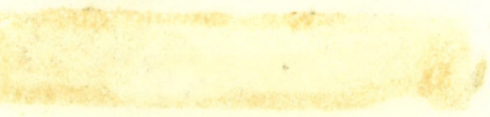



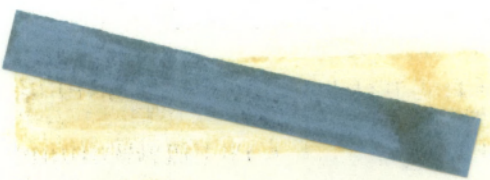


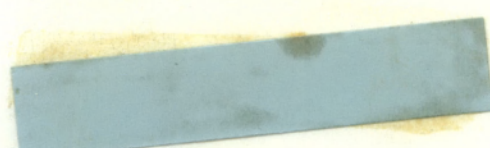
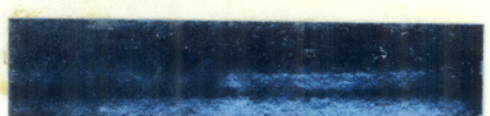

Sample		Name
	. . . . .	gummed
	. . . . .	gummed
	. . . . .	gummed
	. . . . .	gummed
	. . . . .	gummed
	. . . . .	gummed
	. . . . .	gummed
	. . . . .	gummed
	. . . . .	gummed

TABLE VIII --Continued

Sample	Name of Paper
	gummed
	gummed crepe
	Kiddie Kraft
	Kiddie Kraft
	metallic
	water color

Three of the sets of homonyms were mounted on blue and three on pale yellow Kiddie Kraft paper.

The letters were cut from a medium blue water color paper. This paper is about the thickness of lightweight cardboard and has a rough grained surface.

Blue and white were the colors chosen for the bulletin board on the subject of writing (Figure 9).

A plain white bond paper was selected as the background paper.

The round globe shape was cut from a gift-wrap paper with a swirl design in blue, silver, and white. Pictures of a child writing and of children dressed in native costumes were mounted on light blue Kiddie Kraft paper and used to carry out the theme of the bulletin board.








Fig. 9--Writing

The ring on the globe and the writing were cut from blue design paper. Both were mounted on blue cardboard for added strength. The ring was pinned and held in a three-dimensional shape.

To aid in identifying the papers used in constructing the bulletin board pictured in Figure 9, Table IX was prepared.

TABLE IX
 SAMPLES OF PAPER USED
 IN FIGURE 9

Sample	Name of Paper
	cardboard
	bond
	design
	gift wrap
	Kiddie Kraft

A gift-wrap paper with a design of green and gold leaves was selected as the background paper for the Spanish language bulletin board (Figure 10).

The flowers and letters were cut from a Japanese paper called Tandem. Tandem is finished in a different color on each face of the paper. This color characteristic is very effective when used three-dimensionally. Some of the petals of the flowers on this bulletin board were curled to take advantage of this feature. The larger green letters overlapped

blue letters. The smaller letters were cut from the same color as the Spanish word they spell.



Fig. 10--Spanish Language

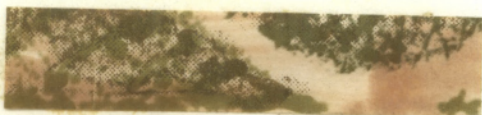
Table X was prepared to help identify the papers used in Figure 10.

Table X

SAMPLES OF PAPER USED
IN FIGURE 10

Sample

Name of
Paper



..... gift wrap



..... Tandem

TABLE X --Continued










Sample	Name of Paper
	Tandem
	Tandem
	Tandem
	Tandem
	Tandem
	Tandem
	Tandem
	Tandem
	Tandem

TABLE X --Continued

Sample

Name of
Paper

. Tandem



. Tandem

For English language (Figure 11) the area of punctuation was selected to be illustrated. A textured pink tablecloth was chosen as the background.



Fig. 11--English Language





The signs were cut from a very light pink gift-wrap paper and mounted with a border of a fuchsia colored design paper. Fuchsia is a red bluish-red color.

A blue crepe paper streamer, having a deeper texture than the rolls of crepe paper, was used in constructing the posts.

The punctuation marks and the larger letters were cut from burgundy colored design paper. Burgundy is a dark bluish-red color. The small letters were cut from the fuchsia design paper used as a border on the signs.

The papers used in Figure 11 are shown in Table XI.

TABLE XI
SAMPLES OF PAPER USED
IN FIGURE 11

Sample	Name of Paper
	crepe
	design
	design
	gift wrap
	tablecloth

Extra-curricular Bulletin Boards

There are many occasions during the school year when bulletin boards may be used to commemorate a special event or to develop personal character.

Figure 12 shows a bulletin board commemorating the opening of school and the welcoming of students.



Fig. 12--Welcome to School

A gift-wrap paper covered with dots which seemed suggestive of confetti was chosen to set the mood for this bulletin board.

The word "welcome" was cut from orange fluorescent paper. The other letters were cut from brown Fadeless paper. Since both of these papers are rather thin the letters were backed with a heavier paper to prevent distortion.

The horn shapes and the hat were formed from five shades of Fadeless paper. The horns were given a fringe of several

shades of tissue paper. Gold Origami paper and yellow-green fluorescent paper were used as decorative materials on the horns and the hat.

Serpentines and paper coasters printed to look like clocks were included to continue the theme of this bulletin board.

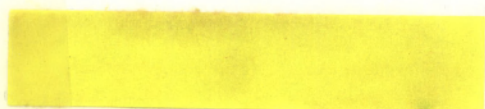
Table XII identifies the papers used in Figure 12.

TABLE XII
SAMPLES OF PAPER USED
IN FIGURE 11

Sample	Name of Paper
	..... Fadeless
	..... Fadeless
	..... Fadeless
	..... Fadeless
	..... Fadeless

TABLE XII --Continued

Sample

Name of
Paper

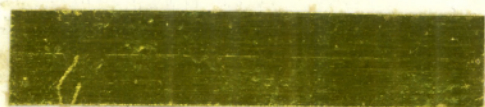
. fluorescent



. fluorescent



. gift wrap



. Origami



. tissue



. tissue



. tissue



. tissue



. tissue

To encourage the reading of library books the bulletin board shown in Figure 13 was made.



Fig. 13--Library Book Reading

The papers used in Figure 13 are shown in Table XIII.

TABLE XIII
SAMPLES OF PAPER USED
IN FIGURE 13

Sample

Name of
Paper



..... construction



..... gift wrap



..... play money

Shades of green were used. The background paper was a pale green gift-wrap paper.

The book jackets were mounted on emerald green construction paper.

The letters were cut from children's play money that was printed in dark green ink on a light green paper. The play money was also placed across the bulletin board to direct the eyes of the viewer and to tie the mounted book jackets into a unit.

Paper hand towels (roll type), tan in color, with a slightly wrinkled texture was used as a background material for the bulletin board emphasizing the development of character (Figure 14).



Fig. 14--Character Development

The base of the turtle and the goal posts are brown blotter paper. Potpourri paper in coordinated shades of yellow, orange, and green was used as trim for the turtle. The trees, banner, and other details were also made from Potpourri.

The hare was cut from gray heavyweight velour paper and pinned so as to be slightly three-dimensional in shape.

The letters were cut from orange Potpourri and backed with a heavier paper to give them added strength.

Table XIV will aid in identifying the papers used in Figure 14.

TABLE XIV
SAMPLES OF PAPER USED
IN FIGURE 14

Sample	Name of Paper
	blotter
	hand-towels
	Potpourri
	Potpourri
	Potpourri
	velour

Tissue paper in several shades of yellow, yellow-orange, orange, and red-orange were overlapped and used as a background material for the halloween bulletin board (Figure 15). Since the tissue papers are semi-transparent the overlapping produces several more shades of orange and yellow in the background of this bulletin board.



Fig. 15--Halloween

The spider's web was cut from a single sheet of Unryu, a Japanese handmade tissue paper. Unryu is white with very fine undigested fibers visible on both surfaces.

The spider and the mask-like features were cut from black velour paper.

The letters were cut freehand, from black velour paper, in shapes that represent dead trees.

Table XV contains samples of the papers used in Figure 15 for identification.

TABLE XV
 SAMPLES OF PAPER USED
 IN FIGURE 15

Sample	Name of Paper
	..... tissue
	..... tissue
	..... tissue
	..... tissue
	..... Unryu
	..... velour

A white gift-wrap paper with an embossing that has the appearance of silk moiré was selected as the background of the Christmas bulletin board (Figure 16).

The angel's face is an oval of pink honeycomb paper. The hair is curled yellow tissue paper and the halo is a gold lawyer's seal. The eyes and nose were cut from black

gummed paper. The mouth is a small red heart-shaped seal. The angel's wings were cut from gold metallic paper and the gown from a folded piece of pale pink Juban paper. This handmade Japanese paper has a smooth, pearl-like surface and contains partially digested native fibers that produce an irregular swirling effect.








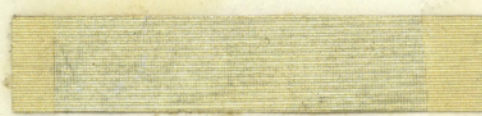

Fig. 16--Christmas

The Christmas tree motif was made from emerald-green construction paper. It was creased and folded to obtain a sculptured effect.

The gold metallic paper used to make the angel's wings was also used to make the lettering.

To aid in identifying the papers used in designing the bulletin board illustrated in Figure 16, Table XVI was prepared.

TABLE XVI
SAMPLES OF PAPER USED
IN FIGURE 16

Sample	Name of Paper
	..... construction
	..... gift wrap
	..... gummed
	..... honeycomb
	..... Juban
	..... metallic
	..... tissue

CHAPTER III

SUMMARY

Since the purpose of this thesis was to show the useful characteristics of a wide variety of papers when applied to the preparation of a number of organizations for bulletin boards, it was hoped that the variety of papers and techniques demonstrated would be inspirational to other teachers when planning creatively their own bulletin boards using paper as an art medium.

In choosing paper to be used the art principles that develop good design were practiced. Relationships of mass, space, texture, and color were the art elements used when preparing the bulletin boards. Balance, rhythm, harmony, repetition, variety, and contrast were also considered in judging the appropriateness of a design for the bulletin boards.

Conclusions

Bulletin boards constructed of paper have a place in the classroom as a teaching aid to develop principles and ideals of human behavior acceptable to our society, and to enhance the appearance of the classrooms. For this study sixteen bulletin board designs were prepared. As a result

the quality as well as the quantity of the designs of bulletin boards improved in other schoolrooms in the Hurst-Euless-Bedford School District.

There was found to be a wide variety of appropriate and interesting materials readily available at a small cost or without cost which had not been utilized previously. Paper as a bulletin board material had few limitations. Some papers were limited in color, texture, and size. Only a few papers tested showed characteristics that made them undesirable as a bulletin board material such as fading, or splitting when bent.

Recommendations

It is recommended that teachers explore sources within their communities where free paper may be available. These sources may include the manufacturers of paper products, commercial printing shops, firms retailing paper products, and even the local grocery and department stores.

Teachers should relate the size of the desired material to the wallboard. The features or elements of the bulletin board design should be large enough to be recognized from a distance. In preparing the bulletin boards used in the thesis it was found that letters should be at least one and one half inches in height in order to be legible from across the average classroom. Letters should not be placed so close together,

nor should other elements of the design be placed in such a close proximity to the letters, that it would be difficult to read. For important words letters two and one half inches in height are recommended. Letters larger than four inches in height may be used if bulletin board space permits. There should be a strong contrast of color or value between the letters and their background. Letters should be of a simple, well-formed design. Elaborately designed letters are not easy to read. Letters that do not contrast tend to blend into the background when viewed from a distance.

Since most untrained teachers tend to use a few basic colors to get greater variety in their design, they need to explore the tints and shades of hues. Too often only the primary or secondary colors are used in preparing bulletin boards. Sometimes it is better to use a different value or intensity of a color already incorporated into the design rather than to introduce a new color.

As a result of this study in the nine elementary schools of the Hurst-Euless-Bedford School District, individual teachers are slowly becoming aware of the use of new materials for the preparation of schoolroom bulletin boards. Faculty members and students alike will increase their abilities to produce good, meaningful bulletin boards as they are encouraged to understand the possibilities and potentialities of papers as a bulletin board material.

APPENDIX

GLOSSARY OF TERMS RELATING TO PAPER AND PAPER MAKING

- Bristol Boards**--High-class cardboards first made at Bristol, from which the name is derived.
- Cardboards**--A general term applied to thick, stiff paper, or to stiff board obtained by pasting layers of paper over one another.
- Cartridge**--A term used to denote ordinary qualities of drawing papers, made from rag or wood pulp, being strong, tough and opaque. Word originally confined to paper used for cartridge making, but now somewhat loosely applied.
- Callendering** [*sig.*]--The process of producing a smooth finish on paper by means of polished rollers.
- Coated**--A general term applied to papers which are surfaced on one or both sides with an adhesive mixture of a mineral substance and glue.
- Cover**--Thick, heavy rag or wood paper, usually rough machine finished, but often variously surfaced, and soft sized; used, as the name implies, for cover to pamphlets, catalogs, and cheap books. Usually sent out in deep, strong artistic colors.
- Deckle-edged**--Paper from which the deckle edges have not been removed. The rough edge is due to the pulp being in contact with the deckle or frame of the paper mold, and when dry this edge is always rough. The deckle edge of genuine hand-made paper can be imitated in machine-made paper.
- Flint**--Papers, usually coated, to which an extra polish has been imparted by friction with a long flat stone moving quickly to and fro across the surface of the paper as it comes through the calenders.
- Foil**--Paper coated with tin, copper, or zinc in the form of metallic powder.
- Gummed**--Ordinary papers coated with common gum or with dextrine.
- Grain**--The general direction of the fibres in machine-made paper.

- Hand-made**--A general term applied to papers made on hand molds, as distinct from machine-made papers, or of a character in imitation of hand-made [paper].
- Kraft Paper**--Brown papers made of soda wood pulp of high-class quality, and designated by the German word kraft, meaning strength.
- Laid**--Papers made on a laid mold, or with a laid dandy-roll. A laid paper held up to the light appears to be watermarked by a number of lines laid close together, intersected by lines at right angles placed about one inch apart, the effect being due to the formation of the mold or dandy-roll.
- Linen**--Term usually confined to the cuttings and rags received by the paper-maker. The linen fibres are the best fibres of the flax plant. Drawing or writing papers containing, in the genuine, no fibrous ingredient except linen rag.
- Manila**--A strong paper, supposed to be made entirely of manila hemp. The term now loosely applied to many papers made entirely of chemical wood pulp.
- News**--Common machine-finished, soft-sized printings, made from mechanical and chemical wood pulps, and containing usually 70 per cent of mechanical [pulp].
- Onionskin**--A term given to lightweight papers that are used for second sheets, manifolding, etc. The name undoubtedly is given because the glazed or smooth surfaced stock resembles in appearance the outside skin of an onion. The particular characteristics are transparency, strength, and thinness for the weight, and the fact that the paper will lie flat and smooth at all times. The best quality of onionskin is made from all linen or all new cotton rags, but the large volume used in a general commercial way is made from pure, bleached sulphite wood pulp. Intermediate grades are made from varying combinations of cotton rags and sulphite.
- Parchment Paper**--Prepared by dipping unsized paper into sulphuric acid of about 1.50 specific gravity and subsequently washing out all the acid.
- Poster Paper**--Common printing paper, used for the production of advertisements for bill-posting and outdoor display. Best qualities are strong and well sized.
- Supercalendered**--Paper, both printing and writing, has been glazed in the supercalender.

Tag--A very strong card used for shipping tags and for work requiring much handling; usually manila cardboard.

Tissue--Very thin papers of many varieties, usually unsized, nearly transparent, so called originally not from its texture but from its use in separating the folds of fine silk tissue.

Tracing--Paper rendered transparent for tracing purposes by being soaked in a solution containing a mixture of Canada balsam, turpentine, and a trace of vegetable oil, and then hung up until dry.

Water-marked--Any paper containing a water-mark, or distinct design in the fabric, produced by the raised pattern on a mold or a dandy-roll.¹

¹William Bond Wheelwright, How Paper is Made (Chicago, 1929), pp. 49-59.

BIBLIOGRAPHY

Books

Wheelwright, William Bond, How Paper is Made, Chicago, University of Chicago Press, 1929.

Books Consulted

Anderson, Donald M., Elements of Design, New York, Holt Rinehart and Winton, Inc., 1961.

Brantlinger, Fred W., What to Do for Bulletin Boards, Wilkinsburg, Pennsylvania, Hayes School Publishing Company, 1960.

Burgert, Robert H. and Elinor S. Meadows, Eye-Appealing Bulletin Board Ideas, Dansville, New York, F. A. Owen Publishing Company, 1960.

Cavanaugh, J. Albert, Lettering and Alphabets, New York, Dover Publications Inc., 1946.

Cohn, Raymond and Michael Estrin, Ornamental Alphabets, New York, Wm. Penn Publishing Corp., 1955.

Cook, Theodore, Curves of Life, New York, Henry Holt and Company, 1914.

Currie, Dorothy H., Making Dioramas and Displays, Dansville, New York, F. A. Owen Publishing Company, 1962.

Kelly, Marjorie, Classroom-Tested Bulletin Boards, San Francisco, Fearon Publishers, Inc., 1961.

Koskey, Thomas Arthur, Bulletin Boards for Holidays and Seasons, San Francisco, Fearon Publishers, Inc., 1958.

Norris, F. H., Paper and Paper Making, New York, Oxford University Press, 1952.

Shaw, Robert, Practical Lettering, New York, Tudor Publishing Company, 1955.

Stafford, Cora Elder, Ivan E. Johnson, and Viola McElhiney,
Art for You Book Five, Dallas, Laidlaw Brothers, Inc.,
1960.

Weseloh, Anne Douglas, E-Z Bulletin Boards, San Francisco,
Fearon Publishers, Inc., 1959.