ACTIVITIES FOR
KINESTHETIC/TACTUAL, AUDITORY, AND VISUAL LEARNERS

An Action Learning Project
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of the College of Education
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Master of Education - Professional Development

by
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Date

Faculty Advisor

This action learning activity is approved for the College of Education.

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Date

Dean, College of Education

4-12-88
Date

Dean, Graduate Studies

This action learning project contains an overview of the literature pertaining to the Kinesthetic/Tactual, Auditory, and Visual learning styles. Since students may learn in various modes, it is the responsibility of the teacher to identify and teach within these modes.

A learning Style Inventory was constructed by the writer. This inventory is suitable for use with a small group of primary-aged students for identifying dominant modalities of learning.

Activities for this project are based on a review of educational materials and on discussions with teachers as to various approaches of presenting material. The activities are for grades 1, 2, and 3 and cover language arts, mathematics, social studies, and science.
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CHAPTER I

INTRODUCTION

Statement of the Problem

The craft of teaching has undergone many changes over the years. One of the newest concepts in education is the idea of children having different learning styles, thereby imposing a responsibility on teachers to identify those learning styles and teach in ways that are most effective to maximize learning for each student.

Learning style is defined in many different ways. According to Keefe, the term refers to "cognitive, affective, and psychological traits that serve as relatively stable indicators of how learners perceive, interact with, and respond to the learning environment" (Keefe, 1982, p.44). The following definition used by the Oklahoma State Department of Education (1983) is included for the purposes of this paper,"...learning style explains an individual's constant way of handling stimuli in the context of learning or behaviors which serve as indicators of how a person learns and adapts to the environment"(Duffy, 1986, p.15).

A student often does not achieve his/her potential in a traditional classroom setting because of the difference between the learning style of the student
Auditory, visual, and kinesthetic/tactual activities can be used effectively to adapt instruction to individual learning style differences. Using such activities as the "Doe a Deer" song to teach the musical scale, Chisanbop to teach arithmetic, and writing a spelling word in the air are examples of teaching to different modes or styles of learning. Similarly, many memory devices like "Spring forward, fall back" to recall when to move the clock forward and back, combine learning modes and memory tricks for recall and learning.

Purpose of the Study

It is the purpose of this paper to clarify the meaning of the concept "learning style" by conducting a review of recent literature regarding learning styles and to provide an inventory to be used with primary students to assess their modes of learning. A collection of activities will also be developed that can be used with visual, auditory, and kinesthetic/tactual learners at the primary level.

Procedure

The method used in developing this paper was that of conducting an extensive review and summary of literature pertaining to the topics of learning mode differences and means of identifying those differences. An example of a learning style inventory is included in Chapter III.
This paper is organized into five chapters and appendixes. Chapter I presents the statement of the problem, the purpose of the paper, and the procedure of study. Chapter II deals with the review of related literature. Chapter III consists of a learning style inventory developed for use with a small group of primary children. Chapter IV briefly summarizes the concepts presented in the paper and offers recommendations. Chapter V is the appendix and includes learning style-related activities which are appropriate for use with primary-aged children.
CHAPTER II

REVIEW OF THE LITERATURE

Definition of Learning Style

There are many definitions of learning style. Some feel that it is a fixed neurological attribute, genetically determined and influenced not at all by environmental or cultural factors. Others believe that one's environment, indeed, has a great deal of influence on learning style and that external variables are beyond the control of the classroom teacher. Therefore, the term "learning style" or "learning preference" should be taken to mean a student's perceptual strength. It is the inner learning preference, independent of cause (Kobrin, 1982).

The Dunn/Price definition of learning style states that it is the "manner in which at least eighteen different elements from basic stimuli affect a person's ability to absorb and retain information." (Dunn, 1977, p.148) Included among these stimuli are the influence of sound, light, temperature, time of day, and the need for food or beverage. Actually, the Dunn/Price learning style is a summary of the student's own opinions about the way he/she learns.
David Hunt's (1979) work on assessing learning styles led him to this conclusion:

Learning style describes a student in terms of those educational conditions under which he's most likely to learn. To say a student differs in learning style means that certain educational approaches are more effective than others for him" (Hunt, 1979, p.31).

For all practical purposes, learning style refers to "cognitive, affective, and psychological traits that serve as relatively stable indicators of how learners perceive, interact with, and respond to the learning environment" (Keefe, 1982, p.44). The following formal definition used by the Oklahoma State Board of Education (1983), is submitted for the purposes of this paper:

Learning style explains an individual's constant way of handling stimuli in the context of learning or behaviors which serve as indicators of how a person learns and adapts to the environment" (Duffy, 1986, p.15).

Importance of Research

Keefe believes that the learning style concept is much more than just another innovation--that it is a new way of looking at educational instruction, a basic framework upon which a theory and practice of instruction can be built (Keefe, 1982, p. 48). He believes that it makes obsolete any single framework for teaching all students and that all recent
innovations, whether staff utilization, modular scheduling, independent study or fundamental education must be rethought in the light of learning styles.

The learning style approach holds that most people learn best through a particular sensory/perception channel—kinesthetic/tactual, auditory or visual. The particular learning style, then, is the channel through which information is received and retained best. In every classroom, there is likely to be a mixture of students who differ in learning style preferences. It is also believed that a student's dominant learning style modality may be complemented by a secondary, less dominant modality. Therefore, a lesson presented in several ways, i.e., lecture, with an overhead and a follow-up demonstration, can serve not only to reach those with one dominant way of learning best, but may also be a good review for those with a secondary, less dominant modality.

Learning Style Theories

Dunn/Price state that at least two studies suggest that teachers often have difficulty identifying student learning styles accurately. Dunn/Price (1977) state that observing the learning styles of students should complement the use of the Learning Style Inventory (Dunn/Price, 1977, pp 418-20).
Various learning style theories are promoted by numerous researchers. Many scholars have chosen to select parts of learning style theories.

One option is the modality approach by Barbe and Swassing (1979). This stresses the idea that young people learn first by touching, feeling, and actually moving through an experience. (The necessity to move is called kinesthesia, while the necessity to touch is referred to as taction.) Barbe and Swassing feel that as a child grows and develops, s/he moves beyond the kinesthetic/tactual mode and learn by actually observing something. These researchers then feel that the final progressive step is auditory learning.

Ideally, according to Barbe and Swassing, a person could learn in all three ways. They state that one modality is probably dominant over the others, but that the extent of dominance differs in individuals. The learning style approach to teaching is most beneficial to those who have dominant modalities. Barbe and Swassing have concentrated on the modality approach and indicate that it provides great success in teaching young children to read (Duffy, 1986, p.15).

David Hunt believes it is the teacher's disciplined trial and evaluation of results that decide the amount
of structure students need in order to learn more efficiently. In Hunt's approach, the teacher's experience and classroom observations are the prevailing factors in identifying a student's modality. This method of identifying learning style is in contrast to the Dunn/Price model in which a student's self-perceptions are most influential.

Madeline Hunter tends to support an informal personalized approach to learning styles. Hunter writes:

Informal diagnosis is the heart and core of diagnostic teaching. For each individual or situation, informal diagnosis yields bountiful information at the moment it is needed. This information may be less accurate than the results from formal diagnosis but the information is reasonably reliable and immediately available. Informal diagnostic information may be obtained through group feedback or sensitive observation. (Hunter, 1979, p. 45)

Hunter also emphasizes that teachers should be concerned with the diagnosis of learning style and that teachers, rather than computers, have the analytical qualities crucial to such diagnosis.

Leonard Davidman (1981) feels the approach to learning styles diagnosis should build upon the Hunter approach, relying heavily upon teacher observation, group verbal and non-verbal feedback, and formal diagnosis. Davidman feels a brief, teacher-made instrument can serve a more useful diagnostic purpose.
The use of student autobiographies, classroom meetings, questionnaires, and monthly individual conferences, can all provide a vital core of personalized evaluation and diagnosis (Davidman, 1981, p.641).

Implications for Instruction

Carbo (1982) states that children should be taught through their identified perceptual strengths. Many researchers, such as Carbo, feel these change over time. Carbo indicates that many studies verify that until the sixth grade, most children learn better through the visual experiences than through auditory channels and can also learn easily through kinesthetic/tactual channels. Then by the sixth grade, girls tend to become more perceptually acute in the auditory channel, with boys developing in this channel shortly. At about eighth grade, girls tend toward greater visual perception sophistication, with boys following in development of the visual channel in a year or two.

Teachers can utilize their knowledge of student learning preferences by the way they speak. The Teaching through Learning Channels (1982) program indicates that using verbs corresponding with the student's preferred channels can improve communication, build rapport, and increase learning. The following list of verbs is cited as an effective tool to help
teachers relate to different learning channels of students.

<table>
<thead>
<tr>
<th>Kinesthetic-tactual</th>
<th>Auditory</th>
<th>Visual</th>
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<tbody>
<tr>
<td>act out</td>
<td>amplify</td>
<td>behold</td>
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<tr>
<td>catch</td>
<td>ask</td>
<td>glance</td>
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<td>build</td>
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<td>diagram</td>
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People reveal their learning preferences in many ways. Often they can accurately define their own preferences as Dunn/Price and Carbo suggest. Teachers can also use an inventory to identify how students prefer to learn new information. In the absence of, or reinforcing an inventory, two of the most efficient ways of determining people's preferred learning style is close observation of their eye movements and listening to the verbs they use. While these are areas in which more research needs to be done, they are practical, workable tools for the teacher. When a person states, "I see what you mean", s/he is quite literally picturing that idea. The speaker is accessing pictures internally. The representational system then would be visual. Another person may state, "I hear you," thereby informing the listener that s/he is representing information auditorily.

By listening closely to the predicates that a person uses, an instructor can learn a great deal about the sensory components of that speaker's experience. Using the same system when responding to the speaker will facilitate greater communication.

Teaching Style

The learning style approach holds that teachers tend to teach by their own preferred learning style,
i.e., visual teachers depend upon visual techniques, auditory teachers upon listening techniques, and kinesthetic/tactual teachers use hands-on approach. When teaching style matches learning style, it appears there is a significant increase in student motivation and in student performance.

Many learning style investigators, such as Carbo (1982) and Torrance (1984) indicate that most classroom education is sedentary. In a lecture, writing mode of instruction, the kinesthetic/tactual learner is at a great disadvantage. Learning style based research shows that thirty percent or more of the students may learn best in the kinesthetic/tactual mode. To integrate perceptual modes, researchers Barbe and Swassing (1979) stress the importance of movement in learning and making the child an active, motivated learner.

Identifying the modality of one's classroom has been simplified by Barbe (1980, p. 47). This researcher states that:

The physical organization of an auditory classroom is not immediately noticeable. Teacher and student desks are grouped together toward the front and center of the classroom with the chalkboard at the opposite end of the room from the teacher's desk. Two learning centers and a listening station are along one side of the room, including a tape recorder, record player, and numerous tapes and records that provide instruction in basic skills and also include the directions for the center. Instruction in the auditory classroom is mainly in the form of verbal discussion and lecture. Student talk is encouraged and reading aloud is
stressed. Reading instruction is built on phonics lessons and there are frequent "spelling bees". The children are encouraged to do verbal math problems and games, and respond orally to flash cards. There is a constant "buzz" of activity as students chat back and forth about their activities.

In the kinesthetic/tactual classroom, there is little physical organization. The teacher's desk is out of the way in the far left corner and is used mainly as a readily accessible storage space for manipulative items. The center of the room contains much open space with much instruction taking place in this area. Acting out a scene or activities occur frequently, teacher guidance is provided for fine motor tasks, and instruction examples are accompanied by models or gestures. The children are encouraged to write spelling words, either at their desk or a much-used chalkboard.

In the visual classroom, the physical organization is immediately clear. The students' desks are organized neatly in groups facing the teacher's desk. Posters, signs, pictures, and brightly decorated bulletin boards are displayed around the room.

Much instruction takes place from the teacher's desk with workbooks, worksheets, and pictorial presentations dominating instruction. Reading is frequently silent, stressing a sight-word approach. Math drill is done either from flashcards or worksheets and spelling is also practiced through the use of flashcards. Instructions to the children are often in the form of task cards or printed materials. Slides, films, and filmstrips are often viewed to provide instruction or as a special activity.

Barbe (1980) indicates that the use of this description to help identify one's classroom modality should be tempered with relationships gathered from the Barbe and Swassing Learning Style Approach Inventory. The combination of the two should instill an awareness within the teacher as to the dominant teaching style in one's classroom and then create a desire to temper one's teaching style with activities from other modalities.
Summary

Efforts are being made to define, identify, and provide special instruction for each student within his/her dominant learning channel. Barbe, Swassing, Dunn, Price, and others have made important contributions in researching and applying knowledge of learning modes.

The author feels input should be gathered, not only from the use of learning style inventories, but also from daily observations, awareness of the student's verb usage, and the use of the student's own self-perceptions.
A LEARNING STYLE INVENTORY

Chapter III presents an example of a learning style inventory developed by the writer which can be used to determine the dominance of visual, auditory, or kinesthetic/tactual modes of learning with primary students. The instructor must conduct an assessment of the student's highest recall capabilities in order to identify the student's learning style.

The inventory consists of a pretending game. The students are going to the store to get some items which are shown on the succeeding lists. The first time, the list is in writing on the chalkboard, allowing the students to watch, but not to copy. The second presentation will be a list given orally. Neither the teacher nor the students will write it down. The third presentation will be a list the teacher dictates orally and the students write. The items on the lists do not have to be given back in order.

The students need to be told that they are being given a test to find out what kind of learner they are. The teacher should emphasize that there is no right or wrong response and one method is not superior to another. It's merely information the teacher will use to help plan lessons to make learning within the classroom
easier and teaching more effective.

Procedure

In order to successfully monitor the testing, a group of not more than ten students is recommended. A list of the student's names must be available so the child's reactions can be coded, i.e., V=visual learner, A=auditory learner, and K=kinesthetic/tactual learner.

The following reactions should be looked for and recorded following the child's name on the class list.

Visual learners will look up or close their eyes as they try to recall a visual picture. (V)

Auditory learners will move their lips or whisper as they try to memorize. (A)

Kinesthetic/tactual learners will use their fingers to count or appear to be writing the list in the air. (K)

**FIRST PRESENTATION OF LIST - VISUAL**

1. Write this list on the board while the students are watching. Do not allow them to write.

**List**

Gum
Folder
Ball
Jump rope
Cookies
1. Read this list orally. Do not write this list on the board nor allow the students to write. Repeat slowly a second time only.

List

Comb
Soap
Baby powder
Lifesavers
Toothbrush
Toothpaste
Potato chips
Pen
Rubber bands

2. Observe and code that the visual learner will close the eyes and try to see each item. Note that an auditory learner will whisper each item as you say it, and the kinesthetic/tactual learner will use movement in some way to help recall the list.

3. Ask, "Who would like to repeat the list?" This time, the auditory learner will be the most eager. Code this on the class list.

THIRD PRESENTATION OF LIST-KINESTHETIC/TACTUAL

1. Provide pencil and paper for this portion of the test.

2. Dictate this list slowly to the group. Repeat the list only once.

List
Milk
Paper bags
Softball
Flour (or flower)
Flag
Knife
Pad
Soup
Juice
Beans

3. Observe the reactions as this test is being conducted, and code the reactions.

4. Ask, "Who would like to repeat the list?"

Kinesthetic/tactual learners will volunteer enthusiastically. Auditory learners will respond next and visual learners will have the most difficulty in reproducing the list.

**Use of Results of the Inventory**

The specific test(s) which a student shows the highest recall of items can be used as an indication of learning style. Included in this evaluation should be the clues as to how the child is processing information as described in the Procedure section.

Through the use of this test, a teacher will have better understanding of the individual differences of the students and can encourage each student to find the most natural way of learning.

The visual learner should realize that while s/he may learn fast, s/he may forget equally fast. To strengthen recall, it is good to write about the subject in the form of an outline, notes, or mapping.

The auditory student benefits by the use of a tape recorder and multiple auditory presentations of a subject for better recall.
The kinesthetic/tactual learner must write to recall material learned. The development of an outlining skill is a very effective method of strengthening recall.
CHAPTER IV

SUMMARY AND RECOMMENDATIONS

Summary

Many methods have been evaluated for determining both student and teacher learning preferences. As every person differs from every other and is a completely individual creation, each teacher must use what method/s prove most effective within the classroom setting.

Successful teaching strategies should expose all students to different kinds of learning experiences. In this way, each student has the chance to excel in areas of strengths and to strengthen other areas of mental organization and conceptualization.

Recommendations

The writer believes that the following suggestions are appropriate for making use of learning style strategies within the classroom.

1. Make students aware of learning styles. Talk to them about learning styles and suggest ways to compensate when a subject is taught in a style different from their own learning style.

2. Use a variety of methods of teaching and let students move around the classroom when they feel the need. Build this movement into the learning situation.
3. Illustrate what is being said by writing on the chalkboard, using the overhead projector, showing the students pictures, posters, diagrams, illustrations, filmstrips, films, and other audiovisuals for students who are visual learners.

4. Talk to students, explain ideas, use cassette tapes and records for those who need the auditory approach.

5. Emphasize the matching of instructional materials and methods to meet the range of individual preferences.

6. Make peers and administrators aware that knowledge of learning style can influence and enhance the development of conceptual learning.

7. Inform parents about learning style. Their assistance is an asset in using the approach.

8. If possible, use a learning style inventory to identify individual learning styles.


Revisions and readjustments will be necessary as knowledge of learning modes increases. Continue to study and research this educational tool and make improvements in instruction as dictated by new knowledge.
REFERENCES CITED


Davidman, Leonard. Learning Style: The Myth, the Panacea, the Wisdom. Education Department, California Polytechnic State University, San Luis Obispo, California, 1981, 641.


Appendix Objectives

The purpose of the appendix is to provide a variety of sample activities which would appeal to and be usable with the kinesthetic/tactual, visual, and auditory learners in the primary grades. As indicated, with a small amount of modification, many activities could appeal to all three types of learners.

The appendix is divided into activities that are applicable in these specific areas: Language Arts, Mathematics, and Science and Social Studies. The following coding system is used to identify each activity as being most appropriate for:

K/T = kinesthetic/tactual learner
V = visual learner
A = auditory learner.

Some activities are coded as being appropriate for all three types of learners.
Appendix A

LANGUAGE ARTS
Language Arts and the Visual Learner

The visual learner likes descriptive materials, likes to picture a scene, and is a good detail finder. For these learners, workbooks and worksheets need the written direction broken into steps. Highlighting is beneficial and so is numbering or lettering the steps.

The visual learner likes silent reading but needs extensive vocabulary practice before s/he can be expected to read for comprehension. The sight-word approach is needed for word attack. Cued flashcards with pictures and visual clues to help with the phonics are necessary. A word is recognized by sight memory and must be presented in correctly spelled fashion. The spelling word should be presented in a group of words with similar visual patterns. Point out the sequence by using a box around like-parts. Shade in the box, and highlight the parts that are different for better visual discrimination.

Pretest all students on spelling lists, then practice only the words that are misspelled. The child highlights or boxes the part missed, looks at the word intently, closes his/her eyes and tries to write the word. Check to see if the mind pictured the word correctly and then actually have the child practice writing the word. Check the model to see if the word is spelled correctly. Repeat this procedure until it is done correctly three
times in a row. Flashcards may be used.

Language Arts and the Auditory Learner

The auditory learner likes to listen for details, to discuss, and comprehends more of what s/he hears read rather than what s/he reads during silent reading. Dialogue and plays are enjoyable, with any form of oral reading useful for better comprehension. Answering the questions aloud and sounding out words is also most beneficial.

Workbooks and worksheets should stress reading the directions aloud several times before beginning work. The phonics approach is most beneficial for teaching word attack, using sound words for association, auditory-cued flashcards, and reading the words aloud or sounding them out by whispering. Word meanings must be discussed and repeated frequently.

The words are spelled phonetically, therefore, emphasis should be on learning to listen carefully to the pronunciations, vowel sounds, blends, and diagraphs. The student should say the word, then sound it out as it is written. Spelling bees can be fun for this learner.

Language Arts and the Kinesthetic/Tactual Learner

The kinesthetic/tactual learner prefers action stories. Reading material related to learning how to make, do, or build something, is enjoyable. Tracking
across the written page with a marker or a finger and also lip moving is necessary when reading.

Answering questions by writing the answer or describing the action is most beneficial. A kinesthetic/tactual learner is good at acting out ideas or doing related projects. Workbooks and worksheets are useful and doodling may be expected to appear in the margins as a verification of the kinesthetic/tactual preference.

This type of learner needs action associations for letter sounds. Kinetic-cued flashcards (gestures, acting-out words) are most beneficial. It is necessary to say a word while tracing, copying, and printing.

For spelling purposes, dictate the words to a kinesthetic/tactual learner as separate items rather than as they appear in sentences. Allow writing in big letters on unlined paper, as it is necessary to this learner to write it to see if it "feels right". Check to see if the student's writing is correct, then allow this learner to write the words many times using different writing instruments and surfaces.
Activities
1. Spelling words are written on a large card with magic marker. Then the student traces the letters as s/he spells the word. (k/t)
2. Paint the list words on a large sheet of paper. (k/t)
3. Make spelling words using toothpicks, pipe cleaners, or clay. (k/t)
4. Find any of the spelling words in a comic strip or a newspaper. Circle or highlight them. (k/t,v)
5. Write each spelling word on a hopscotch sheet. Have a partner tell you what word to spell when you land on that space. (k/t,a)
6. Write words with short vowels. Can they be changed to long vowels? Write your changes. Example: bit, bite. (k/t,v)
7. Write a sentence for each of your list words. Be sure to underline each list word and provide capital letters and punctuation. (v)
8. Trade list words with a partner. Scramble the letters in your partner's words. Trade back. Unscramble your own list words and write the correct spelling next to the scrambled word. (k/t,v)
9. Use cubes or "Spill and Spell" to spell your words. Shake cubes and spill on a rug. Try to spell all of your spelling words. Write them on paper. (You may
shake more than once.) (k/t,v)

10. Print your words neatly on playing cards. Hand them to the person on your left. One person begins by taking the top card and asking the person on his/her right to spell it. If the player spells the word correctly, that player rolls the die and moves the marker ahead the indicated number of spaces. If the word is spelled incorrectly, the marker must be moved backward. (k/t,a)

11. Use a tagboard circle with attached pointer at the center. Laminate and write the words around the edge. Spin the pointer. The partner pronounces the word. If correct, collect two points. If wrong, take away one point. The winner is the first to have fifteen points. (k/t,a)

12. List the vocabulary words down the left-hand side of a piece of paper. Then divide the rest of the paper with a vertical line next to the words. Use the dictionary to find the word and copy the guide words at the top or bottom of the dictionary page. (v)

13. Write a sentence for each vocabulary word but leave the vocabulary word out of your sentence. Give a friend your words and sentences. Have the friend fill in the missing words. Return to the original owner and check. (k/t,v)

14. Write words with a silent letter. For each words, have the student write two or more words with similiar
silent letters. Example: right, bright. (v)

15. Have a partner make a hidden word puzzle with the spelling or vocabulary words included. Find the words and circle them. (v)

16. Make pairs in any way that two words can be compared (beginning letters-red, run; prefixes-reteach, replay; blends-blow, black; etc.). (v)

17. Write a synonym for as many of the words on the spelling or vocabulary list that you can. (v)

18. Look up each vocabulary word in the dictionary. Show its phonetic spelling. (v)

19. Write each list word. Make all short and long vowel symbols in the word. If the vowel is neither, use a star for the symbol. (v)

20. Divide each word into syllables. Provide the accent marks. Check a dictionary for correcting purposes. (v)

21. Choose all of the words from the list that have more than one meaning. Use the words in two different sentences to show the difference in meaning. Share your sentences with a friend. (k/t,v,a)

22. Use at least half of the spelling or vocabulary words and write one of the following: a tall tale, a recipe, a joke, or a riddle. List the words you were not able to use. Hand it to a classmate. See if he/she can add to your attempt with the unused words. (k/t,a,v)
23. Exchange pen pal letters with a child in another school. (v)
24. Have each child write a friendly letter to a family member. Arrange a trip to the post office to mail the letters. (k/t,v)
25. Construct appropriate art projects for the season. Write a story. Provide a starter or a title, if necessary. Display or share the stories. (k/t,a,v)
26. Write a one-sentence summary of a teacher-read story. (v,a)
27. Cut out and arrange different poses of a comic strip character. Write a description. (k/t,v)
28. Have the children form a line. The first child whispers a sentence into the next child's ear. Continue the process through the entire room. The last child shares the sentence. Discuss how stories travel and change. (k/t,a)
29. Use play telephones. Practice proper telephone etiquette. (k/t,a)
30. Teach choral singing. Use records, tapes, or listening posts. The use of folk songs could provide an investigation as to the uniqueness of these songs. (k/t,a)
31. Read a story to the class. Use a prepared list of
true/false questions to be presented in spelldown fashion. (k/t,a)

33. Use game rules of familiar games to help children express themselves and explain a process. For example, "Tell me how you play tag." (a)

34. Use general information to increase oral language usage. For example, "Tell what you did last night. What did you do in music class? What did you get for Christmas? What is your best friend like?" (a)

35. Teach the children how to listen to a nursery rhyme or a story, recall the plot and then act it out. (k/t,a)

36. Read short and simple stories to the students. After every few sentences, stop and have the children recall what is happening. (a)

37. Play an association game in which things and ideas are placed in a specific setting. For example: "For the next minute, tell me all of the things you can think of that belongs in a school." (a)

38. Teach the children to listen to beginning of sentence clues. "The color of this mitten is..." "My name is..." "My favorite game is..." (a)

39. Have a student tell a joke or riddle. Rewrite the punch line. (v,a)

40. Read aloud poems or parts of a funny book such as Dr. Suess. Have the students discuss: Who? What? Where?
Why? When? How? (a)

41. Write, tell, or illustrate a playground rule.  
(k/t,a,v)

42. Tell a good health habit. Write a story about what happens to a character who ignores the habit. (a,v)

43. Play: "I went to the grocery store and I bought..." Each child names what has already been named and adds one item. (k/t,a)

44. Introduce nouns by naming fruits, vegetables, etc. (a)

45. List things you can touch, smell, big things, small things, etc. (v)

46. Turn to your neighbor. One of you tell the other something you did last night. The listener must tell the story to the class. (a)

47. Write what you would do if you saw a tiger in your backyard. (v)

48. Write the days of the week correctly. Stand up as soon as you are finished. Exchange, check your partners. (k/t,a)

49. Make a list of five things you do after school. (v)

50. Write a story about something you'd like to do over the weekend. (v)
Mathematics and the Visual Learner

Visual learners benefit from charts or other models as examples of each mathematical processes. Use demonstrations of manipulatives, flashcards, chalkboard displays, worksheets and workbooks for these students.

Mathematics and the Auditory Learner

An auditory learner should repeat the mathematics rules orally, frequently, and repeat steps in processes as learning progresses. Repeating the facts orally many times is also effective. Allow lip movement, whispering, or sub-vocalizing during the mathematics activities.

Mathematics and the Kinesthetic/Tactual Learner

Use manipulatives to do computation, Touch Math, active mathematics games, and writing the facts to memorize. Experience the concepts by using them in real life, pretend situations (i.e., a play store).
Activities

1. Addition

Place a picture card containing three objects on the chalkledge. Leave a space and place a picture card containing four objects on the chalkledge. Have the children count the objects. Write the numerals on the chalkboard and form an equation telling how many in all. (k/t,a,v)

2. Like sets

Provide set cards having five to ten members. For each card, have the child draw or construct other sets with the same number of members. (k/t)

3. Order

Provide the children with flashcards as illustrated below, one through ten.

[X] [xx] [xxx]

Mix up the cards and have the children arrange them in order from one to ten. Then have the children write the appropriate numeral on the back of the card. (k/t,v)

4. Numbers

Use a group of eleven straws. Place them in a row on a desk or table. Ask a child to count the straws. Repeat with various numbers of straws.

Then, place twelve chairs in a row. Ask a child to count
the chairs. Add two more chairs. Ask the child to count
the chairs again. Repeat the activity using eleven
through twenty objects and count again. (k/t,a)

5. Numbers

Display containers and straws. Assist the child
in counting thirteen straws. Have the child match the
appropriate numeral card with the straws. The child may
guess before counting. (k/t,a)

6. Order

Provide the children with blank cards and with
picture cards of one through twenty objects. Have them
write a number card for each of the picture cards. Then
have them place them in order from one through twenty,
naming them as they progress. (k/t,a,v)

7. Matching

Have the children work in pairs. Give each pair a
plastic container and a stick. Have one child tap the
side of the container twelve times, and the partner writes
down the number of taps. Take turns with other numbers.
(k/t,v,a)

8. One Greater Than

Let the children use calculators to show one more
than each of these numbers: 2, 5, 8, 10, 14, 17, 18. (k/t,v)

9. One Greater Than

Have the child display a group on the flannelboard.
Write the corresponding number on the chalkboard and
then then tell the number just after the given number (k/t,
v,a)
10. One Less Than

Provide two decks of picture cards that show sets for one through twenty. Let one child select a card and ask the other child to hold up a card that shows one less. (k/t,v)

11. One Less Than

Have one child shuffle a set of numeral cards for one through nineteen. Have a classmate pull a card from the deck and give the number that is just before the one that is chosen. The children take turns shuffling, drawing, and naming. (k/t,a)

12. Counting by 2's

Place five counters of one color and five of a contrasting color on the table. Tell the child to arrange them so that every second counter is of the contrasting color. Then have the child count by ones. Next, guide the child in counting by twos to ten as the numbers are written on the board. (k/t,v)

13. Counting by 2's

Provide two sets of numeral cards for thirty through sixty by twos in a mixed order. Challenge two children to put the cards in order. (k/t)

14. Addition Facts

Provide several sets of cards showing the numerals one through five, a plus sign, and a set of blocks. Have one child set up an addition problem with the numeral cards and another child arrange a set of blocks
to represent the problem. Take turns performing the various tasks. (k/t,v)

15. Story Problems

Challenge the child to solve addition problems aloud. For example: "Two dogs are in a house and one dog is in the yard. How many dogs are there in all?" The child may then write the vertical addition for the problem. (a,v)

16. Addition Sentences

Make a circle of yarn on the floor and choose five children to stand in it. Create another circle and choose three children to stand in that one. Outside of each circle, place a corresponding numeral card. Ask, "How many children are in each group? (5, 3) How many are there all together? (8)" Put a plus sign next to the three and explain that this sign means to add. Have the children read the five plus three aloud. Explain that the number of children in all is the number we get when we add five plus three. Point out that the sum of the two addends is eight. Write the vertical addition on the chalkboard and have a child give the answer. Repeat with other numbers. (k/t, a, v)

17. Addition Sentences

Two children may play at a time. Draw five circles on large construction paper and number each circle from zero to four. Let each player throw two beanbags of different colors onto the paper. Have the child
write the addition problem for the numbers on which the bags landed. The score is the sum. (k/t,v)

18. Addition Facts

Give the children oral practice for sums of eight or less. Call out an addition fact. Have the children take turns giving the answer. (a)

19. Addition Facts

Prepare two large charts with the number eight written on the top of each card. Have the children form teams. Direct the children on each team to take turns writing the facts for eight. The first team to complete the task is the winner. Repeat with other numbers. (k/t,v)

20. Calculator Drill

Provide a deck of numeral cards for the sum of eight that contains right and wrong answers. Have the child verify the answers with a calculator and correct those that are wrong. (k/t,v)

21. Vertical Addition

Provide beans or buttons and vertical addition practice cards for sums to ten. Have the children arrange objects to represent each addend. Then the child may give the sum. (k/t,a)

22. Subtraction Facts

Number index cards from zero through six. Put them in a bag and shake it. Have the child remove one card and subtract the indicated number from six. The answer
will become the child's score. The one with the
highest score wins the round. The first person to win
five rounds, wins the game.(k/t,a)
23. Subtraction Facts

Have two children go to the chalkboard and ask a
third child to call out a number from one through eight.
The children at the chalkboard are to write as many
vertical subtraction problems as possible that have the
number called as the difference. The child with the most
correct subtraction facts in the winner.(k/t,a,v)
24. Subtraction Facts

Direct the children to play a guessing game. Have
the children take turns being the leader. The leader
says,"I am thinking of two numbers. Their difference is
four. What are the numbers?" Each child with a correct
guess gets one point. The first child who scores six
points is the winner.(a)
25. Subtraction Sentences

Place eight cardboard tubes on the floor. Have each
child roll a ball from a baseline, four times. The
number of tubes knocked down is subtracted from eight.
The player who reaches twenty points first is a winner.(k/t)
26. Subtraction Facts

Have the children play a bean bag game to review
subtraction problems to ten. Write numeral one through
ten on a heavy piece of paper on the floor and have
the children take turns tossing the bean bag from a designated baseline. The number by the bean bag is subtracted from ten and the answer is the score. The first child to earn twenty points is the winner. (k/t)

27. Number Sentences

Have the children find pictures from magazines that show situations involving eight or less objects. Direct the children to create a subtraction number sentence for each picture. (k/t,v)

28. Missing Numbers

Have the children work in pairs. One child holds up a card with a vertical subtraction such as:

\[
8 - ? = 3
\]

and says, "I'm thinking of eight minus another number. Three is the difference." The partner may use blocks to show the example, then, by using yarn, show how many were removed from the set. The missing number is, then, written on the card and partners take turns holding up the cards. (k/t,a,v)

29. Place Value

Give one child bundles of tens and ones sticks. On small cards, write these numerals: 26, 61, 47, 63, and 85. Have the child use the sticks to represent the
numbers on small cards. Have another child count the bundles of tens and ones to give the correct number. The other child can hold up the card to verify. (k/t, a, v)

30. Greater Than, Less Than

Make numeral cards for consecutive numbers from twenty-three to thirty-four. Write the numeral 24 on the chalkboard. Display the numeral card, 24, on the ledge. Ask, "What number comes just before 24?" (23) Place the card, 23, before 24 on the chalkboard ledge. Follow a similar procedure to find the number that comes just before 29. Assist the child in placing the appropriate card on the chalk ledge and in writing the numeral on the board. Repeat with various cards. (k/t, a, v)

31. Order

Tell the children to write the numerals in order for the numbers between twenty-five and forty-one. Have the child find page twenty-five in any book and check each other's work with the pages in the book. (k/t, v)

32. Counting by 5's

Display fifty tongue depressors. Direct the child to group them by fives, using rubber bands. Then, count by fives. On the chalkboard, have a student write the numbers in a row. (k/t, a, v)

33. Coin Value

Prepare small cards picturing sets of coins. Each
set should include a quarter. Place the cards in a bag. Have the children take turns drawing a card from the bag and stating the value of the coins pictured. (k/t,v)

34. Matching Coins to Value

Have the children cut some supermarket advertisements from a newspaper. Paste each ad on a piece of construction paper with a price tag under $1.00 for the item. Have another child display the appropriate number of coins needed to purchase the item. (k/t,v)

35. Making Change

Assist the children in making their own play store. Have the children decide what items they will need (large carton open at the front, play money, toy cash register, articles with price tags). Assist the children in the use of the store. (k/t,a,v)

36. Telling Time

Have each child make a clock. Use a paper plate as the clock face. Direct the child to write the numerals 12, 9, 6, and 3 in the correct positions first. Then have the child write the other numerals. Use paper strips for hands and fasten them with brass paper fasteners. Have the children use the clocks to tell their favorite time of the day. (k/t,a,v)

37. Graphs

Guide the children in making a graph showing how many children eat lunch at school (hot, cold). (k/t,v)
38. Days of the Week

On the flannelboard, display cards labeled with the days of the week. Discuss which is the first, second, etc. day of the week. Place numerals for ordinal numbers on the flannelboard. Guide the child in matching a numeral and the day of the week. (k/t,a,v)

39. Have the child draw a picture to show a favorite television show and to tell what day of the week it appears. The children may display their pictures and guess the names of each other's shows. (k/t,a,v)

40. Months

Have the children collect pictures from magazines and newspapers depicting scenes related to the various months of the year. Label each month according to its position in the sequence of the months. Display. (k/t,v)
Appendix C

SCIENCE AND SOCIAL STUDIES
Science, Social Studies and the Visual Learner

The visual learner is a good detail finder. Descriptive material is enjoyable. It is necessary to break directions and information into small pieces. Use highlighting and numbering techniques.

Before expecting the visual learner to read the text effectively, do a lot of vocabulary practice. This could include sentence construction and flashcard drills. Allow this learner to locate answers to comprehend the questions in the book.

Science, Social Studies and the Auditory Learner

The auditory learner likes to listen for details and discuss. Oral reading is necessary for good comprehension. Turning the material into dialogue or a play is very effective.

Science, Social Studies and the Kinesthetic/Tactual Learner

The kinesthetic/tactual learner prefers action. Therefore, projects like a mural, diorama, role playing, a field trip, and an experiment are the most effective way to reach this learner.

Tracking and moving of the lips must be allowed as the material is read. Answering questions by writing the answering are most effective for retention.
Science Activities

1. Visit a weather station, airport, planetarium, museum, or other appropriate place. (k/t)
2. Fly kites to observe wind movement. (k/t)
3. Sprinkle salt on ice cubes and observe the reaction. (k/t, v)
4. Make and display food chains. (k/t, v)
5. Cut pictures from magazines showing the various food groups. Display and discuss balanced meals. (k/t, a, v)
6. Discuss and taste samples of food from plants. (k/t, a)
7. Invite resource people, such as a meteorologist, to come and explain the job, including the environment in which s/he works. (a/t, v)
8. Role play an animal. Use its habits, characteristics and environment to help identify the animal. (k/t, a)
9. Trace sources of food eaten by students on a given day. (k/t, a)
10. List and discuss interdependence of neighborhood plants and animals. (v, a)
11. Set up a classroom metric corner to measure length, area, and weight. The following materials would be helpful: measuring devices, boxes, nickels, paper clips, nuts, bolts, cans. (k/t, v)
12. Go on a scavenger hunt in school. Find various items that deal with whole units of measurement, i.e.,
something one meter long, etc. (k/t,v)

13. Make a compass by stroking a darning needle fifty times. Use the South Pole of the magnet and stroke the needle from eye to point. The point will become the North Pole on your compass. Insert the needle through a cardboard arrow suspended from a thread. Label the cardboard to that the eye of the needle is on the South Pole and the point of the needle is by the North Pole. In order for the compass to work correctly, make sure there is no iron nearby. (k/t,v)

14. Spread iron filings on a paper covering various shapes of magnets to show how filings are attracted to the magnets. Draw and explain what is observed. (k/t,a,v)

15. Discuss the physical characteristics of the moon. Using clay models, have the children mold the pitted surface of the moon. Shine a light on the models to observe the light and dark areas created by the pitted surface and reflected light. (k/t,v)

16. Investigate the probable cause of the physical appearance of the moon's surface by doing the following: throw various sized pebbles into smooth sand with varying strength and angles, place a sugar cube on the table and drop an object on it until it turns to powder, or drop pebbles into water and then flour to observe the existence, or lack of, the rippling effect. (k/t,v)
17. Collect rocks on a field trip. Classify in various ways (weight, color, shape). (k/t,v)

18. Produce and observe physical changes in rocks by scratching, pounding, or breaking. (k/t,v)

19. Crack or chip a rock. Compare inner and outer surfaces. (k/t)

20. Fill each of three glasses with sand, clay or loam, respectively. Fill with equal amounts of water. Note and discuss the saturation of each. (k/t,a,v)

21. Use soils from the previous activity. Plant five pumpkin seeds in each. Add equal amounts of water to each. Observe, record, and illustrate the sprouting, growth, and life span of each plant. (k/t,a,v)

22. Collect newspaper articles relating to weather and create a news corner. (k/t,v)

Social Studies Activities

1. Compare environments and adaptations of various nationalities as far as clothing, shelter, etc. Follow up with reports and illustrations. (k/t,a,v)

2. Compare the original environment of earlier times with present day environment. Include noise, air, and water pollution and their causes. (k/t,a,v)

3. Have the children draw a diagram of their room, house, and then neighborhood. Compare and contrast. (k/t,a,v)

4. Make a diorama of a forest community. (k/t)
5. Use the colonial community to make a class time line. (k/t,v)
6. Construct a bulletin board of the students' illustrations of local community workers. (k/t,v)
7. Make a class scrap book of newspaper stories relating to community problems (garbage strike, high taxes, need for a new dump, etc.). (k/t,v)
8. Illustrate in mural form through committee work, the following aspects of a military community: housing, recreation, occupations, transportation. (k/t)
9. Make a class collage of life in a large community. (k/t)
10. Role play various occupations within the apple community. (k/t,a)
11. Have a food tasting party of apple products. (k/t)
12. Set up a model farm. Write stories of a typical day on a dairy farm. (k/t,v)
13. Make butter as a class project. Break the task of producing the butter into small parts and assign each child a job to show an assembly line. (k/t)
14. Have a cheese tasting party. (k/t)
15. Learn songs pertinent to the unit, such as, "Old McDonald" for the study of a farm community. (k/t,a)
16. Invite a soldier to school. Have him/her show the class how to march. (k/t)
17. Plan to read and write a report on an LMC book related to the topic of a forest community. (a,v)
18. Make a display of products (wood, dairy, etc.) (k/t,v)
19. Write a creative story. Pretend you are a tree and
tell what happens to you during a storm. (k/t,v)
20. Make posters (good breakfast, safety, dairy, etc.). (k/t,v)
21. Draw pictures of our homes and then write a story
about an activity that is fun to do in that home. (v,a)
22. Pantomime various jobs in the community. Have the
other children guess. (k/t,a,v)
23. Pretend that you are a colonist. Write an explanation
of why you feel you should be an independent country.
(k/t,v)
24. Draw pictures of people in colonial times doing daily
tasks. Label the pictures. (k/t,v)