A WHOLE LANGUAGE THEMATIC UNIT
ON WEATHER FOR GRADES 4-6

MASTER'S PROJECT

Submitted to the School of Education
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of the Requirements for the Degree
Master of Science in Education

by

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DEDICATION

I would like to thank my children for their support during this project. There were many nights of "fast food" suppers with no complaints. I would especially like to thank my husband Mike for all of his support and help. He did everything he could to help out in any way he could. His emotional support was even more important. Thank you so very much. I love you.

To my daughter Stacy, I dedicate this book to you. You have spent many hours at home alone while I pursued an education. Thank you for being such a responsible and trustworthy child. I love you.
Approved by:

Offilcal Advisor
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CHAPTER I
INTRODUCTION

Whole Language is a philosophy about how reading and writing are learned and how that learning can best be supported by teachers. It sees teaching and learning as a relationship, and education as inquiry for both teachers and students. Teachers support students' reading and writing by immersing them in a literature rich environment where reading and writing are used to explore and enjoy the world of knowledge and ideas which surround them. Teachers also demonstrate the use of strategies and conventions which aid meaning construction.

According to Sebesta, (1990) "Whole language teaching is emergent and, insofar as possible, holistic. This shift from adult purposes to pupil purposes harks back to John Dewey's "experimentalism" of the 1920s and the derailed movement called Progressive Education." This time there may be a difference. We know more about child development, and the stages and conditions that children go through. We are learning the best way for students to learn is to see the correlation between the disciplines. Whole language has not only teachers but also students to become curriculum decision makers. It doesn't deal with sweeping generalizations about what works for all kids or all
teachers. "Whole language opposes prepackaged curricular mandates, top-down decision making and positive quests for truth." (Pearson, 1990). Whole language teachers know that children learn very well by themselves, and do not approve of programs where the student is the forgotten participant. "The system itself seems to perpetuate failure and guarantee despair for the least able. Whole language classrooms make individual children the focus of learning and teaching and ensure individual strengths are valued (Cutting, 1992). According to (Rhodes & Shanklin, 1989) "it is important for the teacher to present the material to be learned in a way that will encompass all or as many students as possible. Researchers feel that whole language will serve this purpose.

One method of teaching using the whole language methodology is to use thematic units. A thematic unit integrates all the disciplines into one unit, teaching a specific theme. The objectives can be whatever the teacher hopes to accomplish by teaching the unit. Since the teacher is designing the unit, the district's course of study in all subject areas can be incorporated into the unit. One important feature of a thematic unit is to have lots of literature to compliment the subject area. Books can be read to the classroom as well as having the students read on their own. The teacher can decide what type of time-line should be used and the number of activities in each subject area that will be needed. After the first year of
presenting the thematic unit, the teacher can adjust the
unit to suit the classroom and the level functioning of the
students.

The authors of this project have designed a handbook on
weather that can be presented to several different grade
levels. It could require more student-made projects or
higher level writing activities for the higher grade
levels. For early elementary students, the handbook could
be adjusted to present the material for younger grade
levels. It can be geared up or down depending on the
preference of the teacher and what goals the teacher hopes
to attain.

Purpose of Project

The purpose of this project was to design and develop a
handbook to support elementary and intermediate grade
teachers in teaching a thematic unit about weather. The
handbook presented in chapter 4 includes a bibliography of
books suggested for the success of the unit. The handbook
gives students a realistic study of meteorology by
incorporating subject areas such as math, physics,
geography, art, and language arts. The lessons emphasize
hands-on science and several activities which apply
cooperative learning techniques which encourage groups of
students to search for, discover, and share the answers to
the questions. The bibliography includes factual books, and
fictional books, as well as picture books. The lessons
require application of critical thinking techniques, and the belief that the ultimate weather curriculum is the real world outside the classroom window, so observation and evaluation skills are stressed. Each lesson provides background information, student activities and classroom experiments, beginning with the basics of weather awareness. The handbook includes a day-by-day account of each lesson to be presented, and contains a post-test for evaluation purposes.

Definitions

**Whole Language:** "A philosophy which takes into consideration a child's physical, emotional, and academic development." (Sheffer, Coombs, & Imbrogna, 1993).

**Thematic Unit:** A unit focusing on a particular theme, bringing together all the disciplines and incorporating lots of literature in the teaching of the theme.

**At-Risk:** Students who because of their social academic profiles are judged to be less likely to succeed in school.

Limitations

This handbook was designed for use by 4-6 grades; therefore, it will not be helpful to secondary teachers. It was also intended with at-risk students in mind, so some of the activities might be inappropriate for gifted students.
"Today, more than ever before in education, teachers are asked to be accountable for student achievement and progress in reading and writing." (Tierney, 1990). There is research to support that whole language is a better method of teaching students regardless of learning capabilities. The whole language method not only benefits the gifted student, but also the at-risk student. Whole language teachers have very strong beliefs about language and how it is learned. "Language is used for real purposes, and to solve real problems. Language is used to get things done, for interpersonal relations, to solve problems, to pretend and imagine, to explain to others, and to recreate past experiences." (Calkins, 1986).

In order to clarify the areas that were researched, this chapter is divided into three sections: Research on the effects of whole language instruction, rationale for whole language instruction, and using literature to teach science.

Research On The Effects Of Whole Language Instruction

Many scholars between the 17th and 20th centuries have advocated whole language principles. John Dewey (1938, 1943) provided a theoretical rationale from which came key
ideas: The power of reflective teaching, learners being at the center of the process of curriculum development, and the integration of language with all other studies in the curriculum. Analyzing both "traditional" and "progressive" education, Dewey insisted that neither the old nor the new education is adequate and that each is miseducative because neither of them applies the principles of a carefully developed philosophy of experience. Dewey urged all teachers and educators looking for a new movement in education should think in terms of the deeper and larger issues of education rather than in terms of some divisive "ism" about education. The whole language teacher's assertion that children must be active learners and that learning must be based on student's experiences is based not only on the work completed by Dewey, but also Bateson (1972), and Eisner (1982).

The work of these researchers reveals that children's learning needs to be reality-based rather than abstract and removed from experience. Whole language teachers use this body of work to justify the belief that literacy is best learned in a whole, meaningful context.

"Piaget and his co-researchers showed how children are actively involved in understanding their world and in trying to answer their questions and solve the problems that the world poses for them" (Ferreiro and Teberosky 1982). According to Piaget, children pass through a series of distinct stages in the intellectual development. He studied
thinking differences between children and adults. "He was convinced that intellect grew through what he called "assimilation" and "accommodation." He believed that children go through a fixed series of cognitive stages, including sensorimotor, preoperational, concrete operations, and formal operations" (Coon, 1983).

Some research on whole language comes from the work by Kenneth Goodman and Frank Smith (1971), and from the subsequent move to apply the research findings to reading instruction. Working from different perspectives they established the notion of a unified single reading process as an interaction between the reader, the text, and language. Those three areas must be joined together to incorporate a learning experience.

Hans Grudin (1985) revisited the data reported by Bond and Dykstra (1967) in the USOE First Grade Studies. While these classes were not true whole language classes, Grundin concluded that those approaches that came closest to being whole language actually produced the best results of various approaches compared.

Lois Bird (1987) reported that when a resource teacher established a psycholinguistic reading laboratory in which children read and discuss fine children's literature daily, reading grade scores on the California Test of Basic Skills increased dramatically. In one year, fourth, fifth, and sixth graders made between 13 and 21 months growth in reading in a nine month period.
Rational For Whole Language Instruction

The true research base for whole language is the vast body of research that informs us regarding how students learn, how students learn to read and write, and what constitutes effective instructional strategies in literacy.

Reading and writing are processes that have much in common. Both readers and writers begin the process by using previous knowledge about the topic, the way language works, and about our alphabetic writing system. Both readers and writers bring certain expectations to the task. These expectations are based on previous reading and writing experiences, knowledge about the purposes of reading and writing, and knowledge about the audiences (Butler and Turbill, 1984). Teachers who understand the development of language, reading, and writing provide activities that involve the children in all these processes. They know that these experiences must also be relevant to the children.

Donald Graves and Virginia Stuart (1985) reported the results of a two year extensive study of the writing of sixteen children. Major findings included that children write more and produce better writing when they are given control of topics and are encouraged to use their own developmental spelling. Children in the study learned to revise their writing and to assist each other in revision. They discovered that every child in the study had behavioral characteristics in the writing process that applied to that
child alone. This led the researchers to conclude that children need a waiting, responsive type of teaching.

Carbo (1988) in theorizing that whole language instruction just might dramatically improve literacy levels in the United States, refers to a study done in Portland, Oregon Public Schools. In a study of 18,126 students, the Portland public schools reported significantly higher reading achievement after one year of implementing a whole language program, compared to achievement during the previous five years when typical basal reader instruction was used.

**Using Literature To Teach Science**

Advocates claim that interdisciplinary instruction appeals to so many educators because it offers many advantages - first and foremost, that it mirrors the real world better than the traditional, discipline-based instruction. The real world isn't divided into separate disciplines. Young children are interested in the entire world around them. It doesn't make sense to them to say "math," social studies," or "science." When instruction jumps from one discipline to another every forty-five minutes, learning is fragmented unnecessarily. The disciplines are contrived ways to give people information. The world operates as a whole. In short, experts contend, the disciplines are artificial, and they splice learning into fragments that may never cohere. When students are
taught solely through the disciplines, they believe that math is math, social studies is social studies, and science is science - and never the twain shall meet. The idea of applying mathematics to a social studies or science question, may never occur to them.

"Interdisciplinary instruction, by contrast, provides connections among subject areas so that students can better understand that their learning has application to real life, to real topics - that learning is not just isolated bits of facts in a vacuum" (Hayes, 1989).

"Writing across the curriculum where students maintain diaries, produce mini-essays, write collaboratively, and play out diverse other writing activities - so long as the writing activities are conspicuously understanding performances, increase learning potential." Students who design their own experiments, engage in debates, act out short stories, and make up their own mathematical theorems, the more they will learn. It makes sense that a student who makes up his own experiment will give greater thought to the whole activity than if he merely is given an experiment to read. Science is all around us on a daily basis even though we may not realize it. Students need to see that science and math is integrated into their daily lives and not just a subject area they deal with three days a week.

Another study (Balajthy 1991) examined a new collaborative consultation process to enhance the classroom implementation of whole language science units that make use
of computers and multimedia resources. The overall program was divided into three projects which included third and fifth graders. Using a model of collaborative consultation, the team developed and taught science units that were based on whole language philosophy. Data was gathered through interviews with team members, observations of actual classroom presentations, and written summaries and evaluations of the project completed by the preservice teacher team members. The results indicated that the team approach, drawing upon the expertise of the classroom teachers, the presevice teachers, and the college consultant, was highly successful, both in demonstrating new educational methods to experienced classroom teachers and in providing valuable field experience in these methods to preservice teachers.

Science, along with other subjects, can also be taught through the use of whole language by using children's literature. A study completed by Kopolowitz (1990) using Lois Lenski's children's books that focus on the realism that predominates in her work where she uses, "real-life observation as opposed to imagination alone. There are many ways to use her works as part of a whole language approach to teach reading as well as science, geography, and social studies."

Case Against Interdisciplinary Instruction

Not everyone finds the arguments for interdisciplinary
instruction entirely compelling. One expert, Grant Wiggins, has reservations about them. While he sees value in making connections across disciplines and is not opposed to the growing interest in interdisciplinary instruction, Wiggins rejects the notion that discipline boundaries are harmful and arbitrary. He doesn't understand the penchant for breaking down discipline boundaries. The contention that the disciplines don't reflect real life sets up a phony contrast because he believes there are disciplines that operate outside of school. He rejects the argument that interdisciplinary instruction is, in itself, more relevant and hence more motivating. Better attention to content and context can make discipline-based instruction as relevant and motivating as integrated instruction. Wiggins also worries that interdisciplinary teaching tests the boundaries of teachers' knowledge, requiring them to wade into topics beyond their area of expertise. Such efforts can be a "fun adventure or polled ignorance." The idea of interdisciplinary instruction is popular because he believes it's a seemingly plausible response to a real, perceivable problem: dreary teaching of subjects. What is needed is better teaching of subjects, including the finding of meaningful connections between them.
CHAPTER III
METHODOLOGY

When first posed with the problem of what to do for a master's project, the authors of this project decided to research and construct a learning tool that would be appropriate for the classroom. One of the authors had previously taught a weather unit in the classroom, but wasn't completely satisfied with the unit nor the results. The information that was provided in the school's adopted curriculum was boring, unimaginative, and lacking in hands-on activities. A new more innovative and interesting set of lessons was needed for a subject area that is talked about on a daily basis.

The whole language approach was employed to prepare this unit for several reasons. First, Troy City Schools do approve of the whole language method, and encourage its use. Secondly, students, which include at-risk students, usually learn material on a higher level and retain the information more readily when all learning modalities are incorporated into the learning process. This unit provides the opportunity for the student to become part of the learning process with the many hands-on activities. The more a student takes an active part in the learning procedure, the more the student will retain. By bringing the outside weather inside through the use of experiments,
the students will have a better understanding of the world around them.

Information for this handbook was originally obtained from the Channel 7 Weatherschool. By using this booklet of information the ideas began to flow as to how the authors wanted the project to look, and what factual information should be included. Instructional Fair Inc. also produces a book for the sole purpose of using whole language to teach a thematic unit on weather. This book can be reproduced, so copyright laws have not been a problem. Although the book contained a bibliography, the researchers included their own. With approximately fifty books from the Troy Library, the authors sorted through them, trying to find the right books for the information that was needed, interesting enough to keep the attention of the students, including those with attention deficit, and that embraced the objectives that needed to be covered. Many books by known authors were chosen so their accessibility would be easier for other teachers to obtain.

Another teaching style often used with the whole language approach is cooperative learning. This style was also incorporated into this handbook. Cooperative learning is a method often used in the classroom so the students can become part of the teaching strategy. This style can be beneficial to a variety of students. First of all, some students are leaders, and like to take charge. Cooperative learning allows for that type of student to be able to
demonstrate those abilities. On the other hand, it is of major importance that the role of leader is not always given to the student that possesses that quality. If groups are chosen and the same group stays together for a period of time, it is important for all the group members to assume the different roles that make up a cooperative learning group. Another important function of cooperative learning is ability grouping the students. By doing this the teacher can be assured that all ability levels are representative in each group. Of course it is very important that the brighter student not feel that he is doing the teacher's role, nor be responsible for the outcome of the group.

Experiments and hands-on activities are included in this handbook so the student can participate in the learning process by being actively involved. Whole language incorporates all the disciplines, but they also need to be presented in a scientific method if that is the goal of the teacher. A student can read about an experiment, and even write about what he believes the outcome of that experiment will be, but the student will have an active roll in the learning process if he is given the opportunity to actively execute the experiment himself.

This handbook recognizes that geography is an area where many school children have difficulty. By using maps and globes the students will be able to locate the states and also the continents. Hopefully they will see patterns of weather or at least familiarize themselves with
the needed geographic areas that are instructed in this handbook.

By incorporating the disciplines through whole language, it is important for the student to be able to have a tangible work to take home, and also to help retain the information the student should have learned. To complete this task, the teacher will use at least one or more of the writing activities, and carry the student's writing through the whole writing process. The brainstorming, the rough drafts, the editing, and finally the published piece of work. This makes the student feel like he has really accomplished a task.

Format Of Handbook

The most important element in choosing a format for this handbook was for it to be organized. The handbook was developed so any teacher could use this handbook without having any difficulty in trying to decipher what the authors really meant. Also for the convenience of the teacher, each time an attached sheet number is given in the daily assignment the teacher will easily be able to find the corresponding page.

The handbook was written to cover a six day period, but depending on the amount of block time a teacher has available, this handbook could easily take longer. If time is an important element, then the teacher could just disregard some of the activities, or possibly some of the
written work, and use mainly the hands-on activities. This handbook was designed to fit the teacher's needs, and can readily be changed to fit the time needs as well as the grade level needs. The activities given in the handbook can be used as-is or made to be more academically challenging or academically lowered for younger grade level students or for at-risk students.

The day-to-day format was used to keep all the materials organized. After viewing numerous thematic units, the authors decided the day-to-day format was the most organized. Other units just listed objectives and it required more time on the teacher's part to decide on which day the handbook meant to cover those objectives. With this handbook, the teacher can read at a moment's glance exactly what is needed on any given day. The literature to be read is listed on the day it is to be read, so the teacher will just need to get the appropriate books from the library, and then grab the book needed for that day. Before teaching this thematic unit the teacher should be familiar with the activities and the literature given on a particular day, so it can be structured to fit into the daily schedule. The teacher can also see exactly what objectives are covered on a given day. If this unit is being taught to another grade level, the teacher can adjust those objectives to meet his own. Page numbers of each activity are included so the teacher can readily find the material needed to cover that day's activities.
Mini lessons could also have an active role in the teaching of this unit. Before a writing activity a discussion on main character, story setting, timeline, and what spelling words the student might wish to included in his writing can be discussed. The bibliography was chosen to specifically be in accordance with that particular day's assignments. The books include factual books, fictional books, and poetry books for the creative writer. Picture books were mainly used because most students will be visually stimulated as well as hearing the information and the events of the story. Picture books are also less time restricting for the teacher. It would be impossible to read a chapter book and then re-read it the same day before the student can then begin work on a project. Time is an important element to a teacher, and it is imperative to have the student receive the most information in the least amount of time, and in an interesting way.

The handbook format was to serve a heterogeneous class, and to incorporate all the learning modalities. The students will be required to complete assignments on their own, by using cooperative learning groups, and as a total group project. In order to reach the "regular" as well as the "at-risk" student, much thought was given to each learning modality. Students who learn auditorially will achieve because much of the information will be read to them. For the student who learns through movement, group activities and hands-on activities will be beneficial. The visual
learner will be able to succeed through the use of picture books, as well as the hands-on experiments. This handbook was designed for the successful completion of a weather thematic unit for several grade levels, incorporating the use of whole language and the various learning modalities so all students can achieve.
can be
WEATHER CAN BE FUN:
A THEMATIC UNIT FOR GRADES 4-6

DEVELOPED BY:

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TROY CITY SCHOOLS

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This thematic unit was developed to incorporate Science into a whole language unit. Having searched for thematic units that incorporated science into them we found that most did not contain the materials that we were searching for in this subject. We decided to build our thematic unit around science and in this way could add the materials and activities that we wanted to achieve the objectives in our school and still have an interesting and fun unit with weather.

Teachers looking at this unit will find a variety of different activities to do with students. These activities will include storytelling, storywriting and making picture books. Other activities include writing different types of poetry and publishing it. Learning the states and capitals is included in this unit. Sequencing and comparing and contrasting are still other activities included in this unit. Having directions to make a Thundercake is perfect for ending this weather unit. Letting the students make this cake and then eating it could be a neat way to end this unit, and all the directions are included!

This unit is designed for use over a six day period. This of course depends upon how much time is spent on each activity. Depending upon the focus of the unit, it could be lengthened to as much as fifteen days. (This would depend on how much of the work was done in the classroom and how much was done as homework.)
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DAY ONE

MEATBALLS ANYONE?

To begin the unit on weather, read aloud to the students the book *Cloudy With a Chance of Meatballs*. This will begin a general discussion on weather and set the mood for the students.

Read aloud the story of Drip Drop (pages 34-37 attached). Discuss as a class where Drip Drop landed and find the locations on the map. Talk about the different continents that Drip Drop landed on. Read the story to the students again. Break into cooperative learning groups with four or five to a group. Give each group a copy of the sentence strips. Have each group put the story in sequential order, and have each student in each group draw a picture to go with the story. Each group will then retell the story of Drip Drop and show their picture while retelling the story.

Ask students what words they know that are related to weather. Write them down on a large sheet of paper, for all to see, under the title WHAT WE KNOW. Then make another sheet entitled WHAT WE HAVE LEARNED.

Read *What Will the Weather Be* by Lynda DeWitt. Discuss the book with the students. Add new weather words to the What We Have Learned list. Pass out a copy of weather symbols to each student (attached). Discuss what climate is so students understand that climate is over a long period of time.

Read *Weather Words* by Gail Gibbons. Discuss what weather symbols would be used on a weather map from this book.
DAY TWO

CENTERPIECES

Make a center in your classroom and include the books in the attached bibliography. Make a paper raincoat and hang it in the center. Then on self stick paper make raindrops and write a different activity on it and attach them to the raincoat hanging in your center. (pages 38-39 attached).

Have students decorate a folder and put their name on it.

Introduce students to the literature books at the center. Give them a list of the book activities (attached). Discuss the different activities with them being sure that they understand what is expected of them and that they know what the setting is and the main character etc... As each student finishes each activity they can put it in their folder. At the end of the unit the student can take their folder home and share it with their parents.

Share the picture book Rain by Peter Spier. Have the students write their interpretation of the story in their own words. Share their writing with the class.
DAY THREE

SHARING SEASONS

Read *Seasons* by Brian Wildsmith.
Discuss the four seasons and what goes on during each season. Break up into cooperative learning groups. Each group will draw a story about a season. They can be as creative as they want. Groups can then exchange their "picture book" with one another. Each group can make an outline or make notes, and then prepare a story about the picture book they have.

Discuss the different seasons and talk about orbit and axis using a globe. Explain why earth has day, night and seasons. (The geography book can be used as a resource here). This would also be a good time to discuss the difference between a map and a globe.

Compare and Contrast the Seasons. Make a Venn diagram. (page 40 attached.)
DAY FOUR

POETRY

Read *The Cloud Book* by Tomie DePaola. If weather permits and conditions are favorable go outside and look at the clouds. (If this is not possible talk about the different types of clouds). Tell the students to try to find different shapes in the clouds and have them write down what they see. Discuss the different shapes and what type of clouds they saw.

Read the book *Clouds* by Jenny Markert. Using the attached instructions make a classroom cloud.

Read the book *Sky Songs* by Myra Cohn Livingston. Read some of the different poems about different aspects of the sky and be sure to use the poem about the clouds.

After reading some of the poetry pieces from this book have the students compose their own poetry about clouds. They may do this as an acrostic poem using the word cloud on an outline of a cloud and then hang them around the room.

or

Students could make a concrete poem (a poem whose words are written in a shape of a picture.

or

Students could write a Haiku. This is a poem with 3 lines and 17 syllables. Haiku usually tells something about nature. A guideline for a Haiku is

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**EXAMPLE**

Soft and fluffy clouds
Showing us different shapes
See the unicorn?

EDIT FOR SPELLING AND THEN PUBLISH THE POEMS!!!!!!
DAY FIVE

FOLLOWING A TORNADO

Read the book *Tornado* by Arnold Adoff. Describe the features of a tornado. Talk about cause and effect. Because of the wind... what were some of the effects. In nature? With animals? To people? To farmland? etc.

Read the epilogue of this book to the students (a copy is attached page 42). Make up your own math problems from the statistics that are given in this epilogue. Ex. A tornado went through Xenia in 1974. How many years ago was this?

Give the students a copy of a U.S. map (page 53 attached) and have them fill in the fifty states and capitals. Using the information from the epilogue have them mark each state where a tornado set down in 1974. Connect the marks. Is there a pattern that can be seen? Do the states have something in common?
DAY SIX

SAFETY

Review what we know about tornadoes. Introduce Hurricanes. Illicit what the students know about them. Write down what they know whether it is true or false. Come back at the end of the period and find out what was actually true and false.

Read the book *Hurricane Watch* by Franklyn M. Branley to the class. Talk about safety procedures for storms, tornadoes and hurricanes. This is also a good book to sequence the events. Compare and contrast tornadoes and hurricanes.

Watch the Video of *WEATHER:COME RAIN, COME SHINE* by National Geographic Society. The students will like watching the different storms and they will learn the names of different weather instruments and how they work. Have students work in pairs and make rain gauges. Set them outside and chart and graph precipitation over several weeks. (page 41 attached).

Or some students could make anemometers, barometers, wet and dry bulb thermometer or do a solar activity.

Instructions for all of these hands-on activities and more are attached pages 48,49,50).
MAKING CAKE

To wrap up the WEATHER UNIT read Thunder Cake by Patricia Polacco. Make grandma’s thundercake and everybody in the class gets to eat it!!! (Page 52)

Other ideas for wrapping up the chapter.

Have students research tornadoes and hurricanes. Write a report on their topic and share it with the rest of the class.

Paint pictures of a tornado, hurricane or thundersorm and depict safety precautions in the painting.

Let students read a book about a particular aspect of the weather that they are interested in to the rest of the class. Remind them that the book should be short because of time.

Let students pretend they are a weather forecaster and they will give the weather forecast for that day in front of the class.

You will find other activity sheets attached that you can use with your students depending upon how you would like to use this weather unit. (Pages 44-51)
Objectives

Objectives covered in Science

Day one
basic scientific measurements used by meteorologists

Day six
describe what causes wind, how it is measured, and its effect on weather

Objectives covered in Math

Day five
interpret graphs
problem solving
multiplication
subtraction
addition
Objectives covered in Language Arts

Day one
sequencing

Day two
identifying story elements
utilize the meaning of the text

Day three
use and make outline, notes
organize information
explore ideas orally with partners or in groups

Day four
produce various forms of writing
edit writing for spelling

Day five
recognize cause and effect
think critically

Day six
compare and contrast
sequence
Objectives covered in Geography

Day one
students will learn what weather and climate are
locate the seven continents and four oceans on a map

Day three
student will describe the difference between a map and a globe
explain why earth has night and seasons

Objectives covered in Health

Day one
healthy foods, food groups

Day five
safety procedures
BIBLIOGRAPHY


Weather: Come Rain Come Shine. National Geographic Society VHS.
Once upon a gloomy day, far above a town similar to yours, an excited raindrop sat in his cloud waiting to fall to Earth. He continued to gather water until he was so heavy he began to fall. This was Drip Drop's favorite part of the water cycle. He knew when he landed, it could be in one of several exciting places around the world. At the thought of this, Drip began dancing and twirling in a playful manner. His thoughts wandered on his destination:

He'd once landed in the savannas of Brazil
Where his fine mist helped water the plants.
One time he landed on a great plateau
Where Indians rejoiced with a dance.
Maybe he'd land in China this time,
Where he'd water the fields of rice.
He's always wanted to fall near Alaska
And become part of the glacier ice.

He could splash into a German country pond
To make a home for frogs and fish.
He may even land in an English king's fountain
Where children throw coins for a wish.
How much fun it would be to land in the Alps
Where he'd turn to mountain snow.
And if he fell in the Nile in Egypt,
Down the world's longest river he'd flow.

Drip's thoughts were broken by the warmth of the sun above and a strange feeling came over him. As the sun's rays passed through Drip's body, beautiful colors began to appear: violet, indigo, blue, green, yellow, orange and red. Drip noticed the same thing happening to all of the other raindrops around him. Together, they had formed a spectacular rainbow that stretched across the sky.

There was a great celebration among the drops with all of them splashing and singing. Then suddenly, the colors began to fade, and Drip was close enough to see the ground below him.

He heard the voices of children laughing and playing. Then PLOP! Drip Drop was surrounded by old raindrop friends. He could feel salt mixing through his body and the tide pulling him toward a sandy beach. Then, CRASH! He was being pulled out toward the sea again. Drip Drop had landed in the Mediterranean Sea!

He was ecstatic over his destination and spent many sunny days in the sea until he evaporated and became part of the water cycle again.
After sharing the original story, *The Adventures of Drip Drop* on page 8, make this social studies bulletin board to show all the places Drip Drop has fallen as he journeys in his adventures through the water cycle.

- To make a border, cut strips of paper 4" x 18".
- Fold in half and then in half again.
- Use the pattern on page 5 to cut umbrellas that will unfold like paper dolls. Be sure not to cut on the folds.
- Use an opaque projector to enlarge the world map above. Color it with markers first. Attach it to the bulletin board under the title, *The Adventures of Drip Drop*.
- Use yarn or markers to point out all these places: Brazil, Colorado Plateau in New Mexico, China, Alaska, Germany, Switzerland, England, Egypt and the Mediterranean Sea.
- Talk with the children about how Drip Drop was part of the water cycle in each of these places.
- Cut out the strips on page 5. (You might want to mount the page on tagboard first.) Place in a sandwich bag and hang on the lower part of the board.
- Fold a piece of construction paper in half. Glue the answer key from page 5 inside it. Hang on the bulletin board with the fold at the top to cover the answers.
- Children will choose a strip, read it and find the proper place to hang it with push pins. They can check their own answers using the answer key.
The Adventures of Drip Drop Retold

Drip Drop sat in his cloud waiting to fall to Earth.

Drip Drop gathered water until he was so heavy he began to fall.

Drip Drop danced and twirled as he wondered about where he would land.

First, he remembered landing in Brazil.

Next, he remembered landing on a plateau where Indians rejoiced with a dance.

Drip Drop thought about landing in China.

He thought about how he'd always wanted to be part of a glacier in Alaska.

He thought he could land in a German country pond or an English king's fountain.

How fun to land in the Alps and turn into snow thought Drip Drop.

Drip Drop thought it would be fun to fall into the Nile River in Egypt.

Drip Drop became part of a spectacular rainbow.

All the raindrops celebrated by splashing and singing.

Drip Drop landed in the Mediterranean Sea.

Drip Drop evaporated and became part of the water cycle again.
# The Adventures of Drip Drop

1. This African country is famous for its pyramids and the Nile River.

2. This country was once ruled by kings.

3. The countryside of this land is known for its grapes.

4. This was the 49th state to join the United States.

5. This Asian country is the largest producer of rice.

6. Various Indian tribes still live in this area of the U.S.

7. In this European country, the mountain temperature is often below 32° F.

8. This South American country has many jungles or rain forests.

9. This body of water creates beaches for 15 countries.

## Answer Key

1. Egypt
2. England (Great Britain)
3. Germany
4. Alaska
5. China
6. New Mexico (Colorado Plateau)
7. Switzerland
8. Brazil
9. Mediterranean Sea
Developing Reading Skills

Group Reading

- Select multiple copies of a book from the list on page 46 (or one you know) to read as a lesson with a group.
- If a book is going to be read as part of a reading lesson, put it at the center after it has been read.
- Use some of the activities listed below and/or some of your own with the book. Write them on raindrops and tape them to a small plastic raincoat. Hang it in the center.
- Keep each student’s work related to the book in a folder. Use the “Independent Reading Record” form at the bottom of the page or a similar one, to monitor their progress.
- At the end of the unit, send the folders home so parents can see their children’s progress.

Book Activities

- Draw the setting, main character, an event, etc.
- Make a time line of story (drawn or written).
- List 3 facts about the main character.
- Look for and write words with the same spelling pattern (oa, st, ate, etc.).
- Find words on specific pages that fit a visual pattern.
- Write what the main idea of the story was.
- Describe the setting in detail.
- Do a research paper related to the book.
- Find and write 3 good feeling sentences from the story.
- Find and write 5 sentences from the story that describe how a certain character felt.
- Write what you liked and/or did not like about the book.
- Compare the story with another one or a personal experience.
- Write the story’s problem(s) and tell how it (they) was solved.

Independent (Free Choice) Reading Record for ________________

<table>
<thead>
<tr>
<th>Title</th>
<th>Level</th>
<th># Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date Started</th>
<th>Date Finished</th>
<th>Conference Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SKILLS:

- Ability to Select Book
- Word Attack
- Comprehension
- Oral Reading
- Enjoyment

Genre

[ ] NF [ ] Fantasy [ ] Mystery [ ] Humor [ ] Poetry [ ] Biography
This fictional story is about a town named Chewandswallow and their crazy weather. It precipitated three times a day, but never in the form of rain or snow - only food falls from their skies.

An informative let's-read-and-find-out-book designed to help children understand how the sun influences the seasons; includes a great demonstration.

The story of a little boy named King Shabazz who didn't believe in Spring and his search for it.

Funny Mrs. Frizzle takes her class on the wildest field trip ever - through the water cycle! Interesting weather facts enhance the trip along the way.

Each month brings something new and different in this classic about the changing seasons.

This well-illustrated book is the perfect introduction or reinforcement for naming the types of clouds. It also gives insight to old weather beliefs.

A man tells his son of a time when walking across a frozen lake he found a fox apparently frozen to death.

This is the comparison of two mountains - one an actual mountain, the other a small child's creation of sand. The factual story describes the effects of sun and erosion as it compares the two mountains. Good for use in a Venn diagram.

This short story is about a farmer who complains about the very hot weather and his clever wife's solution to the problem.

Pica, an Eskimo child, shares a problem with many children, he is always losing his mittens. The text and pictures illustrate his way of life.

This book is an excellent describer of atmospheric conditions and their relationship to thunderstorms, hailstorms, tornadoes and hurricanes. The effects of this violent weather are also addressed. Actual photographs make this a great visual tool.

The story of a whimsical cloud who meets a remarkable island.
Comparing the Seasons

Each of the four seasons (winter, spring, summer, autumn) has certain characteristics. Choose two of the seasons and write their names on the lines above each shape below. Then, complete the other lines with words that describe the season. In the center area, write words that describe both seasons. This is called a Venn diagram.
Your teacher has hung a thermometer outside in the shade. Check the temperature every day at the same time. Record the dates along the bottom of the graph and plot temperatures on the lines. Connect the dots to illustrate the changes. Use one color for Celsius and one color for Fahrenheit.

Instructions for use found on page 6.
These Tornado Poems were begun after the Xenia tornado of April 3, 1974. A few miles away, in Yellow Springs, we lived through the wind and hailstones that the storm produced. The funnels passed us by. We were safe. But we spent that evening, and most of the night, waiting for new outbreaks of storms and listening to reports of destruction and tragedy. After the roads were opened, we were able to see results of the force of the tornado and talk with witnesses and rescue workers.

The Xenia tornado was part of a massive outbreak of tornadoes that struck thirteen states during a sixteen-hour period. From 1 P.M. on April 3 through 5 A.M. the following morning, 148 tornadoes were recorded. Their paths covered more than 2,500 miles. Three hundred people were killed and another 5,400 injured. Over 50,000 people were affected as the tornadoes traveled from Alabama, Tennessee, Kentucky, Illinois, and Indiana, through Georgia, North Carolina, Ohio, Michigan and into Canada. Other states hit were Mississippi, West Virginia, Virginia, and New York—states not usually affected by tornadoes.

This outbreak of storms has been called by scientists a “once-in-a-century” event. In Tennessee, a tornado dropped into a 1,000-foot river canyon and swept back up on the other side. In Kentucky, one left a path five miles wide. A tornado traveled 3,300 feet high, over Betty Mountain in the Blue Ridge Mountains between Georgia and North Carolina. In Indiana, one tornado continued on its path for 121 miles before it lifted back up to the sky. Six towns were struck twice, and damage everywhere was in the many millions of dollars. But the Xenia tornado was one of the strongest and most damaging of this unprecedented “super-outbreak.” Thirty-three people were killed and whole sections of the town were destroyed.

Each spring and summer there are many tornadoes in the South, Midwest, and some eastern states. In late February and early March, when winter breaks and there are occasional warm spells, we begin to listen more carefully to the weather reports each day, and to watch the sky.

These poems are about one tornado during one series of tragic storms. But they are meant for all who have experienced or read about any tornado—any natural disaster. These poems are dedicated to the people of Xenia, Ohio, who are rebuilding, and to people everywhere who survive and overcome forces greater than themselves. We really are stronger.

Arnold Adoff
September 10, 1976
Meteorologists everywhere use symbols to represent different types of weather on maps. The symbols take less room than words. Here is a list of symbols you may have seen before:

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Meaning</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>snow</td>
<td>forms in the cloud as ice and falls to Earth as snow</td>
<td></td>
</tr>
<tr>
<td>showers</td>
<td>light to medium precipitation from clouds in form of rain</td>
<td></td>
</tr>
<tr>
<td>rain</td>
<td>water droplets that have grown too heavy and fell to the Earth</td>
<td></td>
</tr>
<tr>
<td>thunderstorm</td>
<td>rainstorm with thunder and lightning</td>
<td></td>
</tr>
<tr>
<td>hurricane</td>
<td>severe storm that develops in tropical areas</td>
<td></td>
</tr>
<tr>
<td>sunny</td>
<td>clear sky with sunshine</td>
<td></td>
</tr>
<tr>
<td>partly cloudy</td>
<td>scattered clouds with no precipitation</td>
<td></td>
</tr>
<tr>
<td>cirrus clouds</td>
<td>thin, &quot;feather-like&quot; clouds made of ice crystals high in the sky</td>
<td></td>
</tr>
<tr>
<td>cumulus clouds</td>
<td>white, &quot;puff,&quot; fair weather clouds</td>
<td></td>
</tr>
<tr>
<td>cumulonimbus clouds</td>
<td>towering storm clouds</td>
<td></td>
</tr>
<tr>
<td>stratus clouds</td>
<td>gray, &quot;sheet-like&quot; cloud layer that blankets the sky</td>
<td></td>
</tr>
<tr>
<td>fog</td>
<td>cloud of fine water drops found close to the ground or sea</td>
<td></td>
</tr>
<tr>
<td>cold front</td>
<td>leading edge of cold air mass</td>
<td></td>
</tr>
<tr>
<td>warm front</td>
<td>leading edge of warm air mass</td>
<td></td>
</tr>
<tr>
<td>high pressure system</td>
<td>cool air with less evaporation, means good weather</td>
<td></td>
</tr>
<tr>
<td>low pressure system</td>
<td>warm air is rising, forming clouds that bring bad weather</td>
<td></td>
</tr>
</tbody>
</table>
Be a Weather Reporter!

Dear Parents,

Congratulations! Your child has been chosen to act as the class weather reporter on ___________________.

Please help him/her answer the questions below to prepare for the newscast. Please send the bottom of this letter back to school on the day of the report.

_________  Teacher  _________  Date

And Now . . . Today's Weather

The date today is ___________________.

The high temperature today will be ___________________.

Today's low temperature will be about ___________________.

The sun is expected to set at ___________________.

The sky should be ___________________.

The wind today will be ___________________.

Today would be a good day to ___________________.

That's the weather. Have a good day!
Learning Land Gameboard

Carefully cut the gameboard from the cover of the back of the book. Laminate and cut these cards apart. Children take turns answering the questions and following directions. All players must agree that the answer is correct! Use different shells as game pieces.

<table>
<thead>
<tr>
<th>Name a job that might change depending upon the weather.</th>
<th>What does evaporation mean?</th>
<th>What is the water cycle?</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Name 5 colors in a rainbow.</th>
<th>Describe a gale.</th>
<th>Name a place in the room where water is evaporating.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>How cold must it be to snow?</th>
<th>Name 2 types of clouds.</th>
<th>How is rain formed?</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Name a book about weather.</th>
<th>How is a rainbow formed?</th>
<th>What is the name for someone who studies weather?</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Name the four seasons.</th>
<th>Draw the symbol for sunny weather.</th>
<th>Draw the symbol for snow.</th>
</tr>
</thead>
</table>
A Whole Language Gameboard

LEARNING LAND

GEOGRAPHY GLACIER

MOUNT MUSIC

MATH MOUNTAIN

SOCIAL STUDIES SWAMP

READING RIVER

SCIENCE SEA

TREASURE OF UNDERSTANDING

ISBN 0-88012-902-6
Art Projects

Evaporation Paintings

Materials:
- baby food jars
- 1/4 cup warm water for each jar
- 6 tsp salt for each jar
- food coloring
- paintbrushes
- white construction paper

Directions:
1. Mix 1/4 cup warm water with 6 tsp salt and 3 drops food coloring in each jar.
2. Children paint pictures with the mixture on white paper.
3. Let dry. The water evaporates, but the colored salt remains, creating beautiful pictures!

Skies of Chalk

Materials:
- patterns cut from paper (Students create their own or use the patterns on page 40.)
- various colors of chalk
- tissue
- construction paper (Color will depend upon student desires.)

Directions:
1. Generously apply colored chalk around the outside edges of the patterns.
2. Set the patterns on the construction paper and use tissue to gently rub the chalk off the pattern and onto the paper.
3. Use many colors on the same pattern to blend the colors.
4. Overlap several patterns to create a colorful sunset, a stormy sky, a sunny sky, a rainbow, etc.

Reflections of Weather

Sunglasses are worn in all seasons to reflect the sun's bright rays. They may even be worn in the winter to reflect the bright snow! Make your own pair of sunglasses showing a reflection of your favorite weather!

Materials:
- construction paper
- (various colors including white)
- glue
- scissors
- crayons

Directions:
1. Make a pair of sunglasses, oversized on folded paper of any sunglass frame color.
2. Cut white paper and glue in the lens area.
3. Color the lens to show a reflection of the weather of your choice.
More Teacher Demonstrations

Make a Rainbow!

Materials: glass container with large opening
          water
          hand mirror
          sunshine

Directions: 1. Fill container 1/2 with water.
            2. Set mirror in water.
            3. Move the mirror until a rainbow is formed on the walls of the room.
            4. Let the water settle to make a rainbow more clear!

How does it work?
Rainbows are formed when white light is bent, releasing all the colors of the rainbow.
Water bends the sunlight, forming a rainbow!

Make a Tornado in a Jar!

Materials: clear jar
          1 teaspoon of salt
          toothpick
          drop of liquid dish soap

Directions: 1. Fill jar with water.
            2. Add salt and a very small drop of soap from the tip of the toothpick.
            3. Tighten the lid.
            4. Turn the jar sideways so as to hold the lid in your left hand and the bottom of the jar in your right hand.
            5. Rotate vigorously for several seconds.
Teacher Demonstrations

Make a Classroom Cloud!

Materials: 2-liter plastic soda container
small plastic bag of ice
matches
black paper
warm water

Directions: 1. Put warm water in container to fill 1/3.
2. Tape black paper to back of container.
3. Light a match and drop in container.
4. Immediately cover with bag of ice.
5. Watch for a cloud. The paper will help it show up!

How does it work?
Clouds form as water evaporates (warm water) and forms drops on small pieces of dust in the air (match smoke). This happens in the sky where the atmosphere is cool (ice).

Make It Rain in Your Classroom!

Materials: boiling water
ice tray
ice

Directions: 1. Boil water until steam rises (evaporates).
2. Hold the tray of ice about 5 inches above the steam.
3. Continue holding until drops form on bottom of the tray, grow heavy and fall like rain!

How does it work?
The water evaporates (steam) and collects where the air is cool (ice). As more water evaporates, the drops bond to form larger drops that eventually fall to the ground.
**Water Bonds to Form Clouds**

When hot air rises and then cools, it forms small water drops. These collect on tiny pieces of just in the sky. Many of these drops close together form a cloud. As the drops fall to earth, they are still bonded! Try this:

**Materials:** wax paper, straws, sugar, drops of water

**Directions:**
1. Put a spoonful of sugar on a piece of wax paper.
2. Predict what will happen when you blow on it.
3. Blow through a straw toward the sugar and record your observation.
4. Put a drop of water on the wax paper.
5. Predict and record what will happen when you blow on it.
6. Blow through the straw toward the water and record your observation.
7. Complete the rest of the chart.

<table>
<thead>
<tr>
<th>Sugar</th>
<th>Water</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I predict ...</strong></td>
<td></td>
</tr>
<tr>
<td><strong>I observed ...</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Could this make a cloud?</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Why or why not?</strong></td>
<td></td>
</tr>
</tbody>
</table>
Weather Scavenger Hunt

Take a walk outside. Look for things that match the descriptions. Write the item you see next to the clue. Good Luck!

Find something:
1. growing toward the sun
2. moving because of the wind
3. that needs rain
4. that will be part of a cloud
5. where rain cannot reach
6. that will evaporate
7. that Drip Drop may enjoy
8. that doesn't like snow
9. that is shaded from the sun
10. that could be carried by the wind
11. that could be struck by lightning
12. that is warm
13. where rain would evaporate quickly
14. that reminds you of summer
15. that could be damaged in a storm
16. that would protect animals in a storm
17. that is proof of bad weather
18. where rain has washed away soil
19. that changes with the seasons
20. that is found in the sky
**My Grandma’s Thunder Cake**

Cream together, one at a time
- 1 cup shortening
- 1 1/4 cup sugar
- 1 teaspoon vanilla
- 3 eggs, separated
  (Blend yolks in. Beat whites until they are stiff, then fold in.)

Sift together
- 1 cup cold water
- 1/2 cup pureed tomatoes
- 2 1/2 cups cake flour
- 1/2 cup dry cocoa
- 1 1/2 teaspoons baking soda
- 1 teaspoon salt

Mix dry mixture into creamy mixture.
Bake in two greased and floured 8 1/2-inch round pans at 350° for 35 to 40 minutes.
Frost with chocolate butter frosting. Top with strawberries.
CHAPTER V

After much consideration and thought, this master's project was completed with the reasoning that the authors would like to have a meaningful, hands-on handbook that could be used in the classroom. It was constructed in a way that was grade appropriate, and could be adjusted for themselves, as well as others, if the handbook needed to be geared up or down, depending on the grade level it was being taught.

In Chapter I, the use of whole language, which is a philosophy which takes into consideration a child's physical, emotional, and academic development, was documented by several studies, and different author's opinion. Since the authors of the project both use whole language in the classroom, this project became more relevant and meaningful to them. Whole language teaching is emergent and holistic, and allows the students to use their creativity as well as their knowledge-based information to join the writing process with interdisciplinary activities. Thematic units, a unit focusing on a particular theme, bringing together all the disciplines and incorporating lots of literature in the teaching of the theme, are often used in the classroom because the teacher can cover many subject areas and show the correlation between those subjects.
Since both the authors of this project work with at-risk students, students who because of their social, academic profiles are judged to be less likely to succeed in school, consideration was also given to the activities listed in the handbook. Most of the activities that are using the writing process, allow for each student to use their academic abilities and their creativity on their own personal level, so they can aim as high as they wish, or for the lower-functioning student, complete the assignment with measured success.

Chapter II, the review of literature, was divided into three sections in order to clarify the research that was studied. The first section which dealt with the effects of using whole language instruction, incorporated not only John Dewey's theory that children learn through experiences, but also the research of Piaget and how children go through a series of distinct stages in intellectual development. The next section, rational for using whole language instruction, contained more recent studies, which states that the reading and writing processes have much in common. Achievement levels in some schools increased within one year after the school implemented a whole language program.

The area for consideration, using literature to teach science, showed the importance of using interdisciplinary instruction. Since our real world isn't divided into separate disciplines, why should the school day. It is important for the students to see how in science everything
seems to rely on something else. The student understands that learning is not just isolated bits of information, but is connected with the whole of any given topic and can be accomplished by using the whole language method.

In Chapter III, the creation of the handbook was discussed. The authors wanted to incorporate all the disciplines into the handbook, and make sure that all learning modalities were brought into play. Since the thematic unit was developed with at-risk students in mind, it was felt that cooperative learning, total group activities, as well as individual activities should all be included in the handbook. The format given to the handbook was a day-by-day account of material to be covered. This included objectives that are required to be covered as well as books that contain information vital to that particular day's assignments.

The handbook itself makes up Chapter IV. This chapter contains the thematic unit on weather. This chapter could be removed from the master's project and stand alone. All information to teach a six-day weather is included.

Implications For Practice

The handbook contained in this project could be used as-is, or adopted to fit the needs of any elementary teacher. This handbook could be very helpful to a veteran teacher who is trying to find some new ideas to present information to the students. Some veteran teachers who are
not firm believers in the textbook style of teaching, could easily incorporate this material into their lesson plans. New teachers who are searching for ideas to use in the classroom would find this handbook helpful. Many times a new teacher is so overwhelmed with all the material he must cover, that a pre-programmed lesson on weather could be a very big assistance. Experienced teachers who are using the whole language method would find this handbook very beneficial. Those teachers would understand the process with great ease. This handbook could be a valuable teaching tool for a student teacher. Often times a whole language thematic unit is easier to teach than a lesson plan using organized textbook materials. Teachers across the board could have a vantage point by having this handbook in their files.

The authors of this handbook will now be able to enhance the teaching unit on weather by using this tool. The authors realized that planning a whole language thematic unit is time consuming, but since the unit can be pulled from the file each year, the effort that went into the work is worth it. This project made the authors more aware of the many types of literature that can be found at the library on a given subject. This thematic unit will be taught in each classroom before this school year is over, and then if needed revisions can be made. This will be an on-going process that can only improve with age.
BIBLIOGRAPHY


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Tierney, Robert J. Portfolio Assessment in the Reading-Writing Classroom. 1990.