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ABSTRACT

This study describes a program designed to increase student background knowledge in order to improve reading comprehension. The targeted first grade class is located in a Midwest, middle class, metropolitan community. More than half of the school's population is identified as low-income. Evidence for the existence of the problem was obtained through pre- and post-graphic organizer activities to determine theme vocabulary; a home survey; and literacy checklists for readiness and journal writing. Analysis of probable causes was evidenced by teachers' observations of students demonstrating a lack of literacy readiness skills usually acquired from home. Teachers reported a deficiency in language development, background knowledge, higher order thinking levels, and reading and writing connections. After reviewing professional literature and analyzing the targeted learners, a decision was made to select two interventions: implementing learning strategies to enhance background knowledge and language development, and strengthening the reading and writing connection. Post intervention data indicated increased thematic background knowledge and associated vocabulary, improved classroom discussions, increased confidence in attacking higher order skills, improved peer interaction socially and verbally, and an improved comfort level for technology. (Contains 34 references, 9 figures, and 2 tables of data. Appendixes contain word lists; a semantic map; a blank journal page; screen captures; pre- and post-tests; and a lesson plan on pumpkins.) (Author/RS)

BUILDING BACKGROUND KNOWLEDGE TO IMPROVE READING COMPREHENSION THROUGH USE OF TECHNOLOGY

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ABSTRACT

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TITLE: Building Student Background Knowledge to Improve Reading Comprehension Through the Use of Technology

This study describes a program designed to increase student background knowledge in order to improve reading comprehension. The targeted first grade class is located in a Midwest, middle class, metropolitan community. More than half of the schools population is identified as low-income. Evidence for the existence of the problem were obtained through pre and post graphic organizer activities to determine theme vocabulary ; a home survey; literacy checklists for readiness and journal writing.

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CHAPTER 1

PROBLEM STATEMENT AND CONTEXT

General Statement of the Problem

First grade students at the targeted Midwestern metropolitan elementary school exhibited a lack of general background knowledge that inhibited their ability to successfully progress through the literacy process of utilizing reading comprehension and writing strategies. Evidence included pretest/post test assessments, teacher observation checklists, parental survey, and teacher records.

Immediate Problem Context

In the kindergarten through grade six targeted school, there was a registration of 530 children from a multi-ethnic neighborhood. The diversification of the student body was 28% Hispanic, 7% African-American, and 67% Caucasian.The target facility had a significantly higher minority population of 35% than the rest of the schools in the district at 19%. An education program for students of Limited English Proficiency (LEP) was offered at the school. Free or reduced cost lunch was served daily to 57% of the school clientele. Classes are attended regularly by 95% of the students; however, the chronic truancy rate at the school was 11%. The students' mobility rate averaged 17% per year and 48% mobility rate within a five- year span. The faculty observed a trend in which the poverty rate doubled every four years and the minority

rate doubled every ten years.

The elementary building was built in 1970 in a stately, single-family neighborhood. The school was formed from a merging of two smaller schools, and it became the largest of 12 elementary schools in its district. The L-shaped building was a brick two-story situated on the corner of a busy thoroughfare. The school contained 22 classrooms, each furnished with a telephone, an Internet accessible computer, and a cable television monitor. In addition to the classrooms were a computer lab, a library, a gymnasium, a multi-purpose room, three reading recovery labs, a Title I teacher assistant room, a nurse's office, a faculty lounge, and a school office.

Certified educational professionals with an average of 16 years teaching experience staffed the building and were composed of one administrator and 34 teachers. Among the faculty, 21 educators obtained masters degrees, and 13 held bachelors degrees. These professionals were organized into 21 classroom facilitators, two full time and two part time resource room specialists, three Title I/Reading Recovery teachers, one half time speech and language therapist, one bilingual education facilitator, one counselor, one librarian, and three arts specialists (music, art and physical education). In addition to certified personnel, classified staff were employed as follows: one nurse, two clerical staff members, three custodial personnel, four food service personnel, and a parent coordinator.

The staff provided remediation programs to meet the individual student's needs. The Title 1 instructor and the classroom facilitators collaboratively taught reading and math to students in grades 1, 2, and 3. Three Reading Recovery teachers worked extensively with first graders. The speech and language therapist helped students correct speech and language difficulties.

Student performance was further enhanced through emotional and educational support programs. The teachers in the English-as-a-Second Language (ESL) program supplemented the language needs of LEP students. Students spent 16 minutes per day in an Individualized Learning System (ILS) computer lab reinforcing their reading and math skills. Students were offered an opportunity to continue this reinforcement in an extended day computer program. As support to children who were grieving due to a loss either through death or divorce, a select number of certified staff offered Rainbows. Upon parent/teacher referral, a counselor provided support and help to students one and a half days per week. Teachers implemented Peacebuilders to instruct students in appropriate social behaviors. The Hispanic Parent Council (HPC) addressed concerns of the Hispanic school community.

The Surrounding Community

Surrounded by acres of agricultural pastures and cornfields, the community was located in a Midwestern urban center with a population of approximately 40,000. The community was one of several that made up a metropolitan area with a population of 350,000. It was situated on the bank of a large transcontinental waterway. Because of its proximity to the waterway, navigable 10 months of the year, the community and its metropolitan area were designated a U.S. Customs Port of Entry. The area was an important transportation link for the nation's commerce.

Much of the employment in the community was provided by companies manufacturing metal products including farm equipment, elevators and escalators, machine tools, heavy machinery, weaponry, and foundry equipment. The 105 wholesale or retail businesses of the community provided 1,300 jobs which sustained a low employment rate of 3.9%. The variety of employment provided a median household income of $46,000 for the young community where the median age was 37 years

old. Sixty-five percent of the homes were owner-occupied, the median cost being $72,000.

With advanced medical complexes, express care outlets, and a significant number of medical personnel, community members were able to address most health concerns. In close proximity, for acute health needs, was the world's largest university-owned research hospital .

Community agencies such as United Way, Bethany, and Family Resources Inc., Boys and Girls Club, and YMCA provided help in acquiring support for individual basic needs. More than 80 institutions of faith and their affiliated social agencies contributed to the improvement of the community's social welfare.

The metropolitan area afforded a wide range of cultural opportunities. A large civic center accommodated professional theater and concert performances, sporting events, and conventions. Museums and galleries, theaters, a botanical center, and a professional symphony orchestra offered an assortment of activities from festivals to reenactments. Recreational enthusiasts thrived on the massive park system, bike trails, zoos, swimming pools, golf courses, and year-round athletic complexes.

The community's educational system was composed of public, private, and parochial schools for preschool children through college students. Numerous educational degrees were attainable through universities, two and four year colleges, a graduate center, as well as trade and technical schools. Located in the metro area was a nationally acclaimed college of chiropractic.

In addition to the traditional educational program, the district operates an alternative middle school and high school, a special education cooperative, an early childhood learning center, and an educational facility for delinquent boys. The school district's average expenditure per student was $6,100. Kindergarten expanded to an

all day program at the beginning of the 1998-1999 school year.

The economic impacts of the closing and massive reductions in the construction and farm equipment industry in the mid-1980's were still being experienced by the targeted school district. At that time the district's enrollment declined, six elementary schools were closed, larger class sizes were formed, extra classroom space decreased, and the number of school children living in poverty doubled. The area's transition to a more service-oriented economy and the increase of employment of immigrant workers by a local meat packing plant lead to the tripling of minority students coming to school with limited development of language skills and experiences.

National Context of the Problem

The importance of activating students' prior knowledge is of national importance to educators. Students need multiple strategies to help them make connections between their background knowledge and their academic lessons.

Crone (1999) defined the importance of school readiness as "...a repertoire of experiences and abilities that influence the child's response to academic instruction, mastery of material and their performance relative to other classmates"(p.1). Children who come to school with a high degree of readiness skills and experiences may achieve greater success in their academic careers.

Students with limited exposure to books and early literacy opportunities have difficulty with decoding words and comprehension as educational expectations increase (Allen, 1998). Background and word knowledge may ease the transition to the reading challenges students will encounter in academics.

According to Zill, Nicholas, Collin, West, and Hausken (1995), there is a need for innovative approaches to balance the inconsistency of background knowledge that

occurs within a diverse classroom. Of concern to educators are those students who are demographically and developmentally diverse. Instructors need to tailor instruction to meet the needs of those students with reading readiness skills as well as those students who have not yet acquired them.

Teachers must create an environment that encourages the use of strategies to activate prior knowledge. Connecting background knowledge to reading experiences may make learning more meaningful for the students. Teachers who provide activities, strategies, and innovative approaches to activate students' prior knowledge may build background knowledge and may simultaneously increase students reading comprehension.

Chapter 2

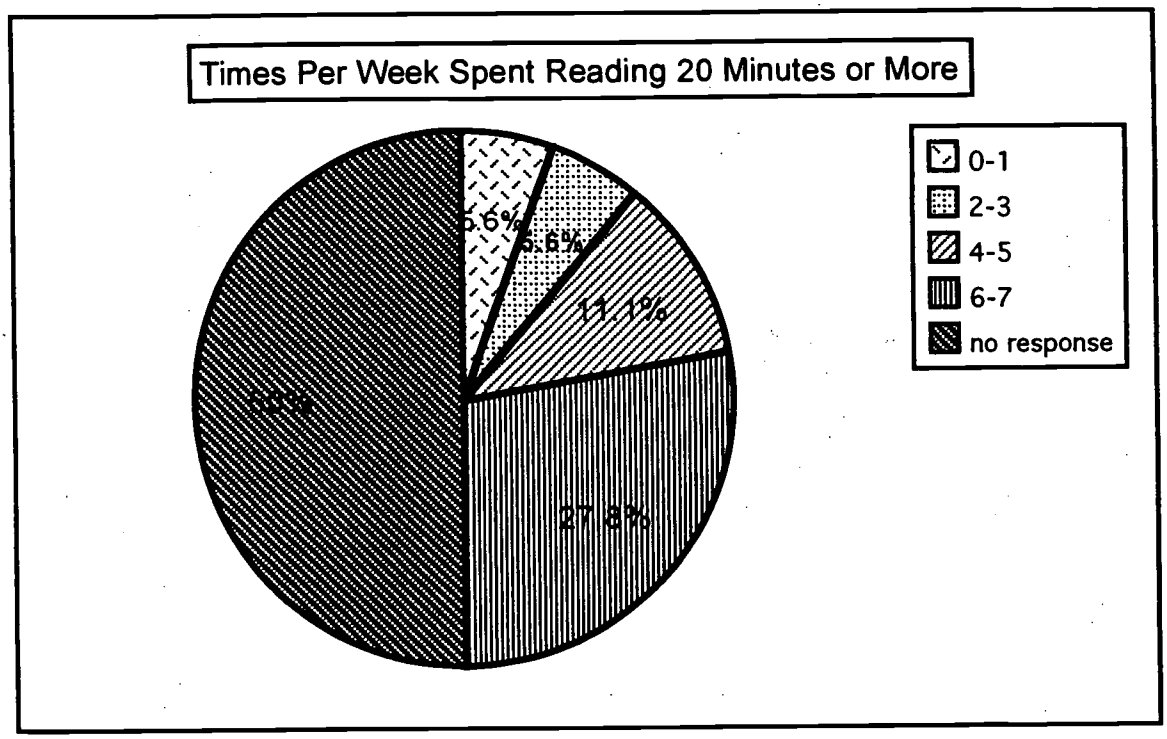
PROBLEM DOCUMENTATION

Problem Evidence

Students in the targeted first grade began their academic careers with ineffectual language development experiences, underdeveloped print readiness knowledge, and a disconnection of reading to writing. Students had difficulty using the early reading strategies taught. Many students lacked the skills of predicting words and events in stories, applying logical sequencing to stories, classifying words according to a given situation or theme. Evidence for the existence of these problems was established through commercial readiness assessments, dictation assessments, semantic concept mapping, questionnaires, and journal writing.

Readiness skills of the students were assessed individually at the beginning of the school year through assessments in Concepts of Print Checklist, Dictation Assessment, Letter Identification Assessment, High-Frequency Word Assessment (Wright Group). A Phonemic Awareness evaluation was done using the Yopp-Singer Test.

A survey of home reading practices was sent home at the beginning of the school year. Of the 18 surveys sent home 9 were completed and returned.The survey was translated into Spanish for the Hispanic parents.(See Figure 1)



n = 18

Figure 1 Parent Survey Times Per Week Spent Reading 20 Minutes or More

Figure.1 shows that fifty percent of the parents took time to read to their children during the week. Daily reading was a routine activity in the homes of 5 students. One survey showed little to no time was spent in reading with the child. The remaining three surveys showed that some portion of the week was set aside for parent child reading. The majority of the parents who filled out the survey demonstrated a motivation to help their child develop the early reading readiness skills and a love for reading.

Marie Clay's "Concepts of Print" checklist was individually administered to the students during the first few weeks of school. This checklist requires the teacher to read a twenty page text and to question the child to determine knowledge of 24 key print concepts and reading readiness skills. (See Figure.2). The Concepts of Print checklist showed that of the 18 students tested, no first grader had acquired all 24 of

the readiness skills. Five of the students scored in the 70% percentile for the necessary readiness skills. Less than 25% of the skills were acquired by two of the students. The remaining 11 students were lacking between 30% and 50% of the basic concepts of print. These critical concepts are prerequisites for understanding the reading process.

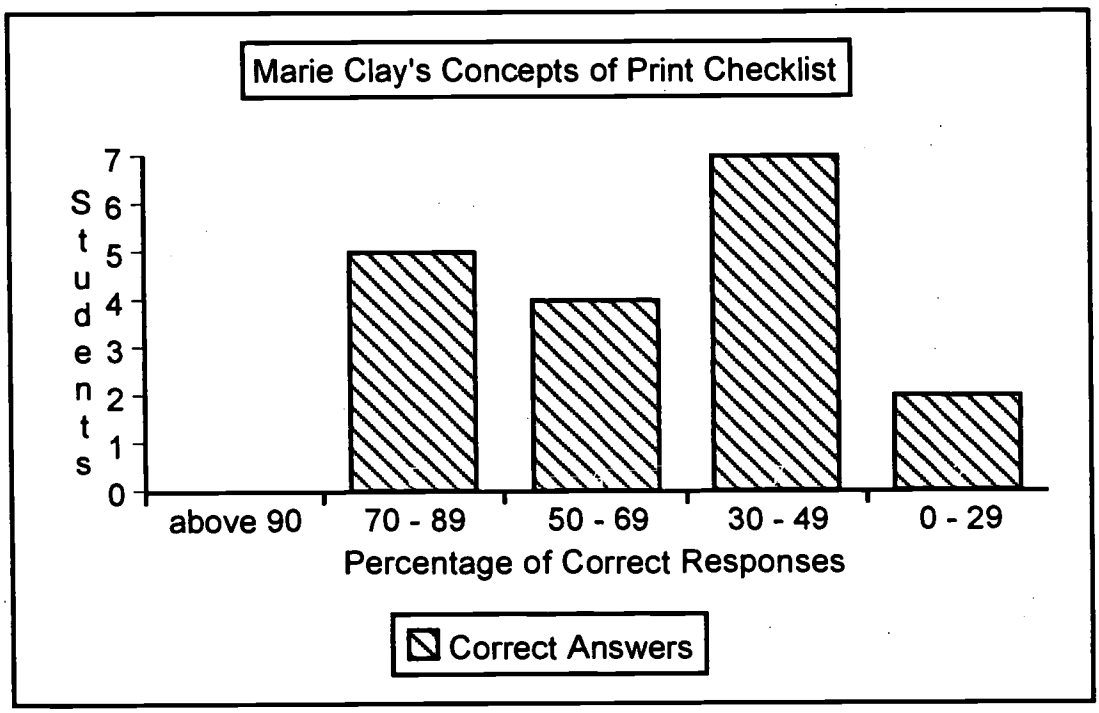


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Figure 2. Marie Clay's Concepts of Print Checklist

Letter, sound, and word identification assessment was administered by the teacher during the first week of school.(See Figure.3). The students were asked to identify both upper and lower case letters, their sounds, and give a word that began with the sound. Letter identification testing demonstrated that 13 were able to name both upper case and lower case letters with 90% accuracy and five students were functioning below mastery level. While letter identification seemed strong, the letter

sound relationship showed weaknesses with 14 students or 78% of the class below the mastery level. Students were asked to name a word with the letter sound. The results were further evidence of an incomplete knowledge of the letter, sound, word connection with 83% of the class unable to demonstrate proficiency. in application. Students were tested for their knowledge of the first 25 sight words. Four students or 22 % of the class were able to read the sight words with 96% accuracy while the ten students read less than 35 % of the word list. Children who demonstrate a good sight word knowledge seem to attain fluency in their reading faster leading to better comprehension.

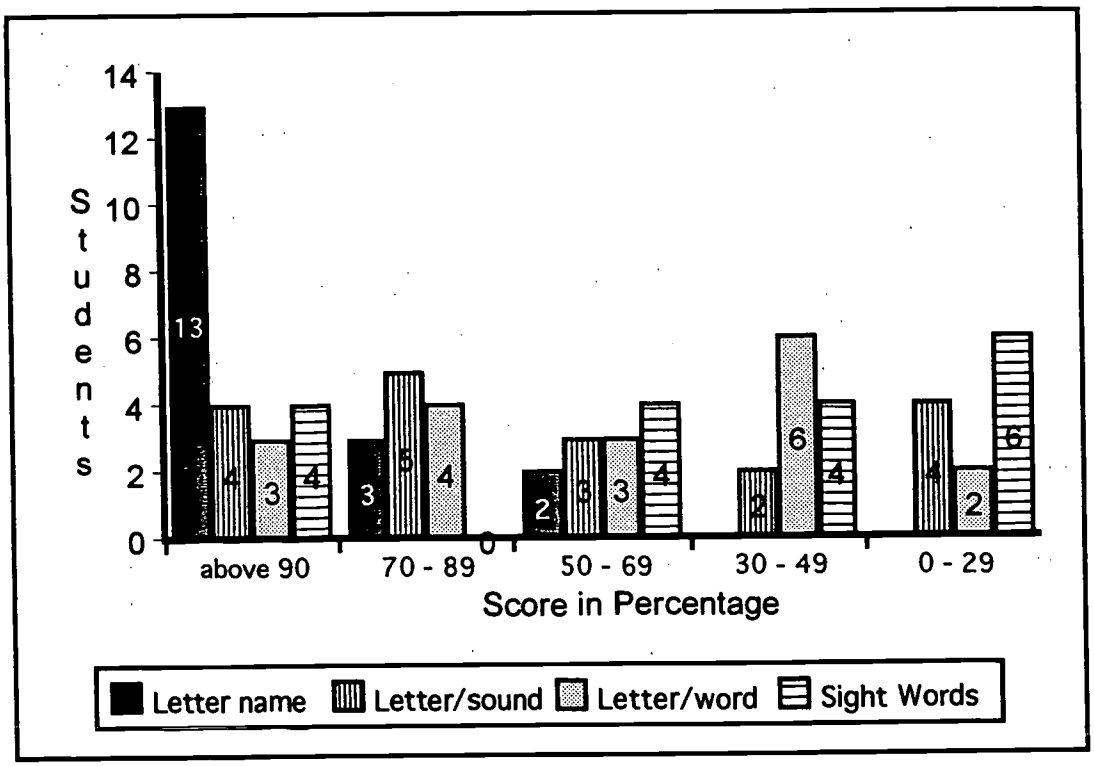

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Figure 3 Letter, Sound, Word, and Sight Word Knowledge

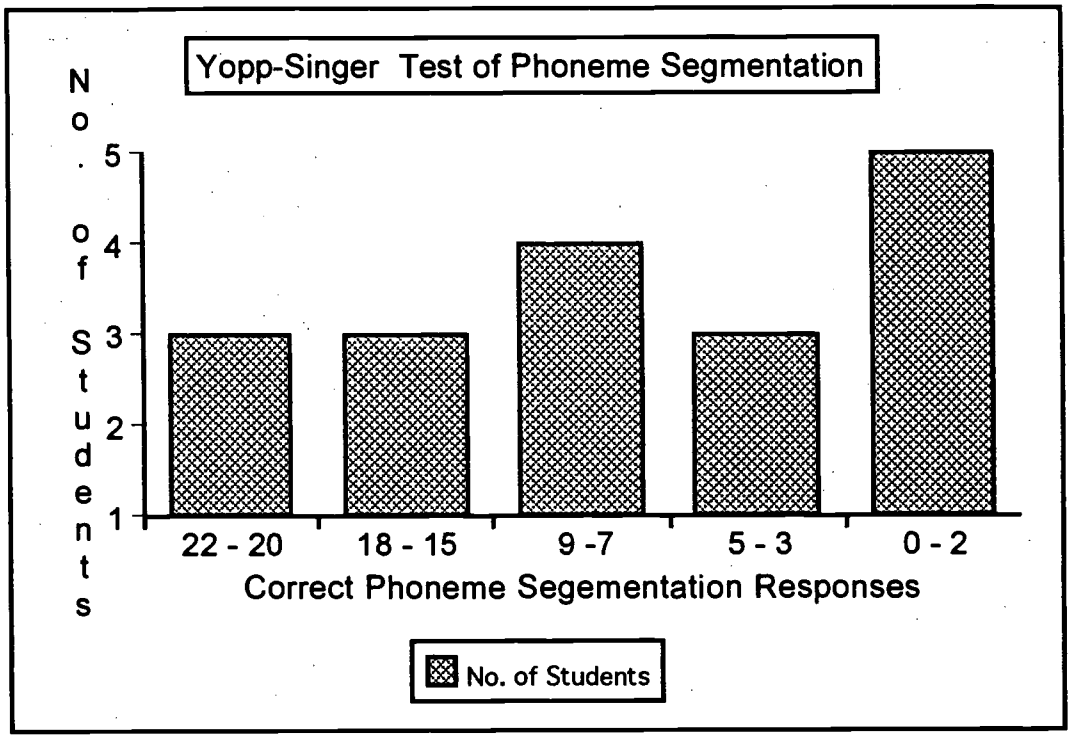

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Figure.4 Phonemic Awareness Scores using the Yopp-Singer Test of Phoneme Segmentation

Figure 4 is representative of students phonemic awareness skills. Correct responses to all twenty-two words were given by 2 students and indicated a fully developed sense of phonemic awareness. The students with less developed phonemic awareness skills were 67% of the class. Students with a good understanding of phoneme segmentation may find it easier to spell words in their writing and to decode words when reading

According to Figure 5, a representation of individual running records of a primer level book taken at the beginning of the year, 78% of the class was reading at their frustration level. In the class of eighteen students,22% of the students had acquired

enough knowledge of print to be reading at the advanced levels. Comprehension may be is more easily attained when students have adequate knowledge of reading strategies.

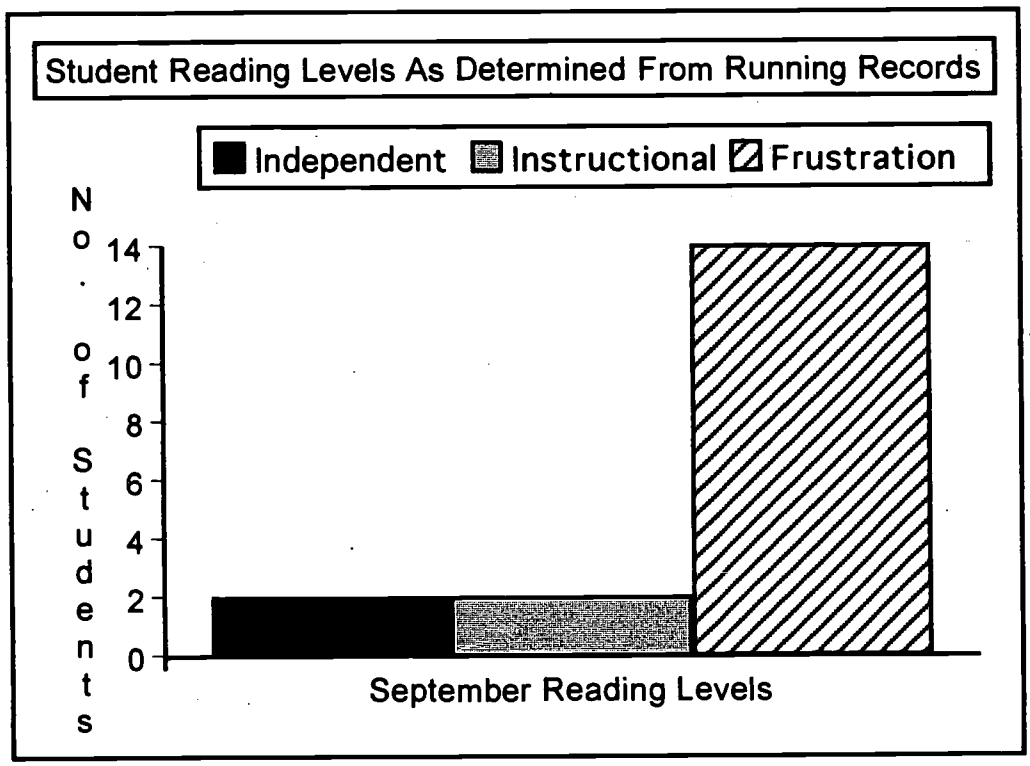

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Figure 5 Student reading levels as determined from running records accuracy rate.

Table 1 evidences the students understanding of the reading and writing connection. In September, the table shows 16% of the students had a good understanding of the concept. In addition, 67% of the class showed no evidence of understanding the use of specific letters for sounds when writing. These findings corroborate the previous assessment results. Students that demonstrate good phonemic awareness may develop their writing skills faster and become more

successful in the acquisition of language development and reading comprehension.

Table 1

September Early Emergent Dictation Assessment

	Good	Adequate	No Evidence
Phonetic awareness	3	3	12
Spelling	3	4	11
Writing rules	0	6	12

n = 18

This problem was further evidenced by the students limited ability to participate in classroom discussions, to sequence events logically, to make reasonable vocabulary predictions, to generate labels for common elements or actions, to sort or classify words according to a theme, and to move beyond the safe sentence structure to include a variety of words in their writing. Evidence for this was derived from teacher observation of oral reading, running records, and a pretest semantic map of theme knowledge.

Probable Causes

Reasons why students have difficulty achieving reading success are many and varied. Students may demonstrate limited literacy readiness experiences, limited experiential background/prior knowledge, limited vocabulary development usually associated with the acquisition of background knowledge, and limited motivation to use and/or apply reading to writing.

Many students may not have sufficient opportunity to fully experience a print rich home environment. The print materials available in students' homes may not be child-centered. The reading of newspapers, magazines, or books may not be sufficiently modeled by an adult or determined to be an important activity of the family.

Children may not have enough access to age-appropriate books.Often these books are not shared or discussed with the child. Parents may lack resources to obtain children's books. The lack of literacy of the parents may influence the literacy development of the child.

Writing may not be observed by the child as an important communication tool in the family. Writing letters, thank you notes, and grocery lists or keeping calendars are not a part of the child's lifestyle.The student's lack of basic literacy experiences may negatively impact the child's knowledge of the fundamental concepts of books and print meaning.

The importance of a child's "readiness to learn" was emphasized in the Goals 2000:Educate America Act. Whitehurst(1999) defined readiness as an inventory of experiences and competencies to support children's learning of academic objectives, proficiencies, and social skills. Reading readiness becomes a component of this inventory and corresponds to emergent literacy which is the precursor to reading and writing.

The results of the 1994 National Assessment of Educational Progress taken by fourth grade students across the U.S.indicated that 40% of the students did not meet the basic level of reading and 70% were not reading proficiently (United States Department of Education,1997). This strategic set of goals was a formulated to be achieved by the year 2002.The government recognized in the goals the importance of students coming to school ready to learn and the acute responsibly of the family to provide early learning experiences critical to the child's future.

Socioeconomic status (SES)of families may be a contributing causal factor to the readiness levels of students approaching their initial schooling experience. Zill, West, and Hausken(1995) cited statistics from the National Household Education

Survey which documented the following risk factors common to families of students with learning frustrations: mother's education level, primary language; and marital standing at child's birth; one parent home; low socioeconomic status (LSES). These factors translate into attention difficulties, delayed speech and language, and pre-literacy development. Storybook read-aloud experiences differed between middle class students entering first grade with 1,000 to 1,700 hours of reading background to those of low income students with few as 25 hours of reading background. (Whitehurst,1998; Cunningham, 1995). Reading aloud provided enriched vocabulary and greater language structure development (Elley,1997). According to Anderson and Freebody (as cited in Stahl, Jacobson, Davis & Davis, 1989), vocabulary knowledge indicated the extent of a student's prior knowledge on topics. Payne(1998) found that minority students and those of LSES use a predominately casual register of language usage supported by non-verbal cues. This register lacks the language structure and word development demanded by the school and work place. Payne attested that users of the casual register utilize a 400-800 limited word vocabulary. Young children who have not been read high interest children's books that support language, word development, and story structure enter school at a disadvantage. Their readiness level hinders them and makes a love of learning that much harder to facilitate.

When young children interact positively with adults through reading, talking, and experiencing enrichment activities, they increase the likelihood of a successful academic career. A child who enters school with the appropriate readiness skills may be more motivated and less frustrated with his learning. With a more positive attitude,the child may increase his opportunities to become a successful literate student as well as a life long learner.

Chapter 3

THE SOLUTION STRATEGY

Literature Review

"The purpose of literacy education has always been preparing children for the opportunities of life offered through the jobs of the future" (as cited in Leu & Kinzer, 2000)). Children of the Twenty-First century need Twenty-First century skills. Students' literacy skills must prepare them for jobs that have not yet been conceptualized. While educators may not know the exact job title, they do know many of the characteristics of those job requirements. Studies by Bruce, Drucker, Gilster, and Mikulecky, and Kirkley,.(as cited in Leu & Kinzer, 2000) described future job tendencies. Personnel may need to work in collaborative teams, possess problem-solving skills requiring critical thinking, execute teamwork and communication skills, and be able to research information. The information age begun in the Twentieth Century will transcend the next century with the increased importance of those information skills of reading and writing using the added component of technology. The next generation of employees now entering school must be started at a young age on this new literacy path. Children adapt to technology quickly and fearlessly. Educators need to take advantage of a child's curiosity and channel it toward an academically sound education for life long learning.

The degree to which young learners are exposed to literacy in the home varies greatly. Levels of reading achievement in today's classrooms are representative of the diversity in the home environments contributing to early literacy knowledge. Many children begin their formal schooling with limited literacy readiness experiences. Zill et al. (1995) pointed out that the objectives of the classroom teacher must be to nurture the growth of all students and their diversified needs with innovative approaches. (Whitehurst et al.,1998) indicated the necessity of developmentally appropriate interventions for procuring these important skills and suggested Bredecamp's definition of developmentally appropriate as "learning through active exploration and interaction" (p.864). This type of instruction allows the child to develop at his or her own rate. Meeting the diverse levels of emergent literacy skills found in today's classroom may be found in the effective use of computer-based technology.

McCarthey (2000) completed a review of studies that demonstrated the relationships of home literacy environments to reading achievement. A study completed by Baker (as cited in McCarthey, 2000) described successful background characteristics which encouraged a young child's emergent literacy. These characteristics are: the presence of reading materials in the home, experiences with a computer or television, awareness of adult reading practices, allowances of time for parent-child reading, oral communication and word play, values placed on reading by parents, and the interactions between home and school literacy. The more factors present in a child's primary environment, the more literacy knowledgeable and school-ready the child may become.

Many students have not had sufficient opportunity to experience the culture rich settings in the community in order to build background knowledge for school related activities. The children's life experiences have been deficient in concept and language

building, discussions, feedback, and vocabulary development that would enable them to form connections to their reading. Background experiences and the vocabulary that stems from them are crucial to new learning presented in the classroom.

One reason students may lack a general background knowledge and vocabulary which inhibits their reading process and comprehension may be because they come to school with limited literacy readiness experiences. Young students need an early exposure to practices that promote prekindergarten literacy and readiness skills. Concepts of print knowledge are acquired through adult-child reading time and the discussion it cultivates. Children learn to associate story telling with print.

As indicated by Cunningham (1995), when parents read aloud books to their youngsters, the children learn a purpose for reading and writing. They learn the language of print, letters, words, sentence, punctuation, and word spacing. The young students begin to understand the directionality of print and develop a foundation for phonological awareness. Precursors to a child's reading and writing development begin when they possess some knowledge of familiar concrete words and recognize most letters along with their sounds. Ideally, all children should arrive in kindergarten with this knowledge in place in addition to the 1,000 hours of reading and writing activities upon which the teacher can build.

The United States Department of Education (1997) acknowledged that the presence of outside forces may limit enacting the readiness goals of their strategic plan. In pursuit of these goals, the task may be impossible to try to make up the thousands of hours of students' missed literacy building activities associated with a quality story time.

Cunningham and Allington (1999) recommended a four-block, balanced literacy framework of activities to provide for various levels of student literacy

readiness. The four blocks consist of a shared/guided reading block, a self-selected reading block, a shared/guided writing block, and a working-with-words block. Each of these areas have within them activities and strategies to help children develop a rhythm and understanding for language. Integration of these four main blocks of literacy development may provide young learners with the cornerstones upon which to build their future success.

The teacher may facilitate a child's literacy readiness through the use of shared reading. Shared reading occurs when the teacher reads books, poems, or class writings multiple times until the children are able to join in and share the reading. Using big books, which contain predictable events, repeated language patterns, refrains, pictures and rhymes, give children opportunities to pretend-read and promote their phonological awareness, language development, and word knowledge. This type of reading provides the safe support of the group where budding readers can practice reading behaviors, prediction, and story sense (Cunningham, 1999).

Guided reading (Fountas & Pinnell, 1996) provides a structure for strategy-based mini-lessons taught or reinforced in small, flexible groups. Follow up, readiness, and comprehension activities may include role-playing, sequencing teacher made sentence strips to the book, and letter and word recognition such as counting the number of times a specific word or letter of the day appears on a page. Guided reading groups allow the teacher to individualize the support level to meet students needs, to lead students into a deeper discussion of the story with higher order questioning techniques, and to assess developmental reading progress while gradually increasing the text difficulty.

In addition to the strategies of shared reading and guided reading, shared writing may be utilized to provide students with literacy readiness. Teachers bring

students together in the writing block to witness the application of their reading through writing. Shared writing is an interactive, developmental process where the teacher and children author messages together building phonetics, sentences, and story structure knowledge (Fountas & Pinnell,1996). The teacher facilitates the ideas, purposes, and independent writing process and composition. Writing topics may be about books read in class, the days happenings, or content area studies. They may build from a particular story structure such as Brown Bear Brown Bear What Do You See? (B.Martin,1971) to Sea Turtle, Sea Turtle Where Do You Swim. (Routman,1991) provided a list of shared writing ideas, wall stories, essays, poems, original story endings, and shared experiences such as field trips, class observations, class journal entries, class rules and charts, evaluations of books, and other activities. Shared writing may provide the support to move the young authors into the guided writing and independent writing activities that can be incorporated into making the reading/writing connection.

Emergent readers, those readers just acquiring the basic understanding of print, arrive at school with different readiness levels. Eisenwine and Hunt (2000) used computers to help emergent readers attend to print through the use of the program Hyperstudio (Wagner,1997). This program allows early readers to create little books to master the alphabet, high frequency words, directionality, and one-to-one correspondence. Mastering these skills may lead to a higher level of reading. Students may create illustrations to match letters, sentences, and written stories, thereby providing early readers with comprehension activities. Eisenwine and Hunt (2000) recommended the use of the software program KidPix (Broderbund, 1997) to help students during independent writing time. Students can write a sentence and then, with the drawing tools, illustrate their work. Letters can be visually and auditorily

reinforced through the use of the letter stamps. As a letter is "clicked"; it is stamped on the screen and read by the computer. Computer software programs may motivate young readers to acquire early reading and readiness skills to support the literacy process.

Another reason students may lack a general background knowledge and vocabulary which inhibits their reading process and comprehension may be because they lack background experiences and the vocabulary development that results from it While most children learn their beginning literacy at home with parents and care-givers, for students from low income families, the school is their primary source for first literacy experiences (Heibert & Pearson, 2000). Children are coming to school with experiences that teachers have not had or may not comprehend. These experiences may be reflected in cultural differences or socioeconomic differences such as homelessness. Many of the students' experiences may be unrelated to the kinds of experiences found in the texts or topics taught in school. Multicultural materials are becoming more available but with limited content. The traditional, middle-class framework upon which schools are modeled are not necessarily those of the students. Schools do little to use the experiences that children come with to anchor their literacy (McCarthey, 2000). How does a teacher bring about the knowledge and experiences necessary for a more rounded, balanced, and equal education for all students? Researchers render the use of the read-aloud strategy to be one of the best and most efficient methods to build language and vocabulary.

According to Ellmore, Olson, and Smith (1995), technology could be the tool that provides equity across the diversity found in the classroom. In order for this to happen, computers must be used creatively utilizing their strengths of bringing cultures and people together, sharing and gathering information to expand

knowledge, and developing critical and creative thinking skills. Papert (1998) answered critics of the computer drill and practice usage typically found in schools. by stating that computers are at their "weakest doing a job that is not what they can do most powerfully" (p.2).

The power of the computer lies in its ability to take the user to information, destinations, and personalities that may be inaccessible or too time consuming to research. The user can be transferred to localities to find up-to-date information and timely learning experiences.

The Internet has opened the classroom to virtually the world--past, present, and future. This online strategy has come to be known as the virtual field trip. Mandel(1999) described the virtual field trip as having the capability of taking students to locations previously unimaginable. Through virtual field trips students can see what it may be like to go back in time, be launched into space, or follow scientific exploration on Antarctica. According to Buttoner and deMoll, and Goldsworthy (as cited in Mandel, 1999), the virtual field trip can deliver the same cognitive and affective rewards as the actual field trip. Mandel recommended these field trips be taken in small collaborative groups that would foster dialogue and higher thinking levels. When appropriate follow-up discussions and activities are used, the virtual field trip experience, like the real field trip, is enhanced. Students who use the computer to take virtual field trips may build background knowledge, engage in meaningful dialogue, cultivate language and vocabulary development, and advance their higher order thinking skills.

Students may have limited familiarity with an experience or theme and without a meaningful explanation often do not have the word knowledge to communicate about it. This lack of background vocabulary may inhibit the students ability to make

predictions about words and events in a story. Students may find difficulty in classifying words within a given relationship. They may seldom participate in the daily classroom discussions or may show confusion during these discussions. Stress symptoms may appear in students when they are involved in an activity or discussion about a topic with which they are not familiar, ready for, or equipped to handle (Ruckman, Burts,and Pierce ,1999). Teachers may label these students as having behavior problems which may impede their academic progress.

Young students need a concrete world of hands-on experiences and enrichment to provide them with a foundation of knowledge for when the construction of abstract learning will take place. Cunningham and Allington (1999) recommended field trips that stimulate all the senses as one of the best methods to build the knowledge of struggling readers. Young children develop an emotional attachment to these types of experiences that can transfer to new learning. Students who are exposed to real life experiences may be motivated to enhance their learning with that found in the classroom. When outside field trips are not available, Cunningham and Allington suggested bringing in concrete items representative of the current theme. A list of theme-related scavenger words is sent home with teams of students over a weekend to hunt out representative examples prior to beginning the study. The team most successful with their collecting decorates a bulletin board around their thematic items. A class scavenger hunt of theme related objects or pictures may help develop vocabulary, language development, cooperation, and theme understanding.

Drawing can be a useful tool to build background vocabulary. Moline (1995) endorsed the creation of visual information through drawing. Diagrams, graphs, and maps are useful to pre-literate students and LEP students. When students have difficulty with language, drawing becomes a valuable means of communicating

understanding. Words and drawings are easily integrated into picture glossaries. These glossaries are illustrations that can be labeled with appropriate words, such as the parts of a honeybee. As a post sorting activity, a drawing can be made of sorted groups followed with labeling, listing, or creating a table of the group. Flow charts and time lines can be drawn to demonstrate comprehension of a story. Drawing may help provide a link to learning new vocabulary words and develop comprehension for those students new to the academic process.

Thematic organizers have the potential to activate a student's prior knowledge as a link to new learning. Alvarez (1989) demonstrated that these organizers increased comprehension of low ability readers. Graphic organizers allows learners to build their own meaning and connections to a topic, idea, or concept. With this type of active learning, students become empowered in their own learning (Fogerty,1997). Teachers who use graphic organizers to help visualize information may help the learner engage in the thinking and comprehension process.

Another reason students lack a general background knowledge and vocabulary which inhibits their reading process and comprehension may be because they lack basic language development. Parents and care givers are a child's first teachers. From the moment the child is born to the moment the child enters school, the parents' teaching and environmental enrichment activities, their culture and ethnicity structures, their talking and responding with their child, are what set the patterns for the development of their youngster's language. Typical school academics requires an understanding of the formal language patterns of oral and written communication. Students who have a sufficient knowledge of these formal language structures may find greater achievement in school and in life.

According to Gee (as cited by Payne,1998) to supplement a child's language

development, teachers must first recognize the different social and cultural aspects of the primary language that the student brings to the classroom. This primary language may be dictated to by culture, ethnicity, or class of the individual and translated into difficulties with vocabulary, language register, interpretation, comprehension, and story structures found in academic reading and writing .

The school and work place operate in a language using the formal register of English. This register requires the use of complete sentence structure and a specific word choice allowing the speaker or the writer to write clearly. Story structure is sequentially ordered events showing cause and effect. For at risk students raised in a casual register of language development, these concepts may be foreign and need to be directly taught. To facilitate language development in students, Payne (1998) suggested that students should first write the way they talk, then rewrite their work using the formal register. Students should be expected to relate their feelings in formal register. Stories should be told first in formal register and then in casual register. Graphic organizers should be used in comparing stories. Stories should be used as a teaching mechanism in the content areas with the encouragement of individual participation in the writing and telling of them. Payne advises the use of mental models to help students visualize the type of sentence pattern to construct. These graphic organizer models utilize simple symbols and shapes to let the writer know what type of word comes next in a sentence. Students knowledge of semantics may be heightened through the demonstrated use of simple sentence diagrams which permit them to develop more appropriate oral and written language skills.

According to studies completed by Langer (as cited in Leu & El -Hindi,1998), language development is arrived at through the interactions of children with adults and peers. Familiarity with appropriate sentence structure, story structure, and

conversational patterns are necessary for language development. In addition, Wells and Chang-Wells (as cited in Leu & El-Hindi,1998) promoted the idea that thinking processes are developed through the use of language in social contexts.

Cooperative learning creates an ideal social context to develop language skills among peers. In addition, critical thinking and social skills are enhanced by the nature of the collaboration (Johnson and Johnson, 1991). Cooperative learning situations require participants to be committed to helping each other understand concepts and together learn to apply these concepts. Increased exposure to social interactions may help stimulate semantic knowledge, foster critical thinking skills, and help students achieve greater academic success.

A further reason students may lack a general background knowledge and vocabulary which inhibits their reading process and comprehension may be because they lack experience with higher order thinking skills. Thinking critically encompasses a wide range of skills that include attributing, comparing, classifying, sequencing, drawing conclusions, analyzing, problem-solving, and decision making. Pogrow (1992) discussed his observations of students not knowing how to handle discovery type learning and the big picture ideas and connections they required. At risk students, in particular, showed difficulty in applying information outside the original context. Pogrow concluded that these students lacked the opportunities to construct their own meaning. At-risk students may have had inadequate modeling of the thinking process usually found in cultivated conversations with adults. This adult interaction where students are questioned and asked to reason and to explain their ideas seems to be a critical step in developing comprehension leading to critical thinking skills.

If higher thinking processes are the necessary skills for future employment,

how are the students going to obtain them? Clark (1992) theorized that the best problem solvers seem to be tenacious toddlers, offering his own evidence of a toddling granddaughter who demonstrated problem-solving with varied attempts of putting on her own diaper. He affirmed that higher order thinking skills are a holistic, integrated and instinctive process that begins developing early in life. Developing social activities to foster the innate thinking skills of early learners may improve comprehension skills needed for higher order learning.

Pogrow (1992) recommended the use of open-ended student /adult conversational opportunities similar to those one might find around the dinner table. Adults might utilize Socratic questioning to develop the thinking processes. In the classroom, the teacher may act as a facilitator for a community sharing time where events of the day or concerns may be expressed and discussed. When young learners interact in meaningful queried dialogues with adults, they may develop the skills necessary for comprehension.

Computers may have a place in the development of background knowledge and higher order thinking skills. Lamon, Chan, Scardamalia, Burtis, and Brett (1993) demonstrated that "computer supported intentional learning environments" helped students build knowledge, increased comprehension, and created a more positive attitude toward their studies. Students may work collaboratively within a hypermedia program, comparing and explaining ideas, writing and revising, texts, discussing, and problem solving. Critical thinking skills may be developed through the use of teamwork and technology, providing students with the first steps towards the employment needs of the future.

The literacy needs of the Twenty-First century are evolving and escalating at an astronomical rate. One only has to look to the power of the computer at retrieving

information for documentation. It was not too long ago that a two mega-byte computer was the processing system to have. Today's information systems are doubling the speed and capacity in less than five years. Our young students will be required to have the skills necessary to not only read, comprehend and interpret printed information but multi-visual texts as well. They will need the higher level thinking skills to problem solve, apply, and evaluate the information they receive as well as work in teams to create solutions. This literacy must begin early with innovative approaches that demonstrate a multiple means of achieving a literate mind. The young students' futures may depend upon the knowledge of these new literacies.

Project Objectives and Processes

Taking into consideration the many strategies available from which to design an effective plan of action to promote change among first grade underachievers, this teacher researcher concluded that her approach would encompass a combination of diverse strategies. The teacher will instruct students in each of the following: teacher designed multi-media virtual field trips, thematic units incorporating teacher-designed activities to increase language development, and drawing to learn techniques.

> As a result of implementing multi-media presentations emphasizing vocabulary development through concept exposure during the period of September 2000 through January 2001, the first grade students from the targeted class will expand their background knowledge base and improve their reading comprehension as measured by a graphic organizer, review of writing journals, running records and parent questionnaire.

Processes to be used to implement this objective include the following:

1. Locate virtual field trips on the Internet.
2. Create a hypermedia field trip to supplement thematic unit.
3 Develop language building activities for use with multi-media CD/ROM

4. Teach computer skills to re- run the various presentations and programs as a learning center.
5. Create a semantic web assessment tool for pretest and post test measurement of virtual field trip knowledge.

As a result of the implementation of thematic units emphasizing language development during the period of September 2000 through January 2001, the first grade students from the targeted first grade class will acquire a core of related thematic vocabulary as measured by graphic organizers and writing journals.

Processes to be used to implement this objective include the following:

1. Determine the themes to be used for units of study.
2. Create a target list of thematic vocabulary words complementing the virtual field trips.
3. Assemble a thematic word log consisting of journal writing form and drawing paper for pretest of background knowledge and post test for knowledge gain.
4. Develop lesson plans incorporating multiple intelligence activities
5. Assessment tools, teacher observation, journal writing, evaluative questions --Mrs. Potter's Questions

As a result of the instruction in "drawing to learn" activities during the period of September 2000 through December 2000, the targeted first grade students will be able to visually depict their knowledge of words, background knowledge, and reading comprehension as measured by teacher observation and inquiry.

Processes to be used to implement this objective include the following:

1. Collect pictures and items to analyze for content names.
2. Demonstrate how to draw picture glossaries and label the parts.
3. Create scavenger hunt lists of items for thematic units.
4. Create an observation checklist to assess drawing content.

Project Action Plan

Week 1-3	Meet with parents, collect forms, surveys, administer student assessments	Teach and Model semantic mapping, computer skills, drawing techniques	Instruct in cooperative learning social skills	Instruct in cooperative learning social skills	Check parent log weekly
Weeks 4-5	Pretest knowledge for theme B, implement scavenger hunt	Take Virtual Field Trip	Administer Post test semantic map for new learning	Immerse in theme activities, coop. learning and multiple intelligences	Check parent log weekly
Weeks 6-7	Pretest knowledge for theme B, implement scavenger hunt	Take Virtual Field Trip	Administer Post test semantic map for new learning	Immerse in theme activities, coop. learning and multiple intelligences	Check parent log weekly
Weeks 9-10	Report Card Assessments and Conferences	Class self assessment of Coop. Soc. Skills/reteach activities			
Weeks 11-13	Pretest knowledge for theme B, implement scavenger hunt	Take Virtual Field Trip	Administer Post test semantic map for new learning	Immerse in theme activities, coop. learning and multiple intelligences	Check parent log weekly
Weeks 14-16	Pretest knowledge for theme B, implement scavenger hunt	Take Virtual Field Trip	Administer Post test semantic map for new learning	Immerse in theme activities, coop. learning and multiple intelligences	Check parent log weekly

Methods of Assessment

In order to assess the effects of multi-media presentations in the development of student background knowledge in the targeted first grade, graphic organizers will be developed to measure vocabulary development. A weekly parent questionnaire will be developed to measure the retention and interpretation of the students vocabulary and comprehension skills. A student theme journal will be developed to further assess the transfer of new knowledge to reading and writing. Curriculum based literacy checklists will be used to monitor developing reading strategies.

CHAPTER 4

PROJECT RESULTS

Historical Description of Intervention

First grade students in a Midwest metropolitan elementary school demonstrated a weakness in general background knowledge and associated vocabulary which inhibited reading progress and comprehension. Students had difficulty predicting words and events in stories, applying logical sequencing to stories, and classifying words according to a theme. A plan of action was designed to address several areas of the literacy process and language development that included theme vocabulary, background knowledge, and the reading and writing connection.

The first objective of this project was to augment the first grade students background knowledge and improve their reading comprehension as measured through the use of graphic organizers, journals, running records and parent questionnaire. The second objective of this project was for the first grade students to acquire a core of related thematic vocabulary as measured by graphic organizers and writing journals. The third objective for this project was for the first grade students to visually depict heir knowledge of words, background knowledge and comprehension as measured by teacher observation and inquiry.

The objective of this project was to expand students background knowledge of predetermined themes and to increase their vocabulary about these themes. This new vocabulary development would transition into other classroom readings and help

students become independent readers. To reinforce thematic concepts and address learning styles of students, drawing was used to visually depict knowledge of words, background knowledge of subject matter, and concept comprehension. To determine the level of prior knowledge the student possessed, a pretest was conducted by asking students to draw a picture or a labeled diagram and produce a semantic map. The student could choose to use pictures and words on the semantic map. The student followed the activity with a dictation to the teacher about the drawing. The teacher presented a virtual field trip on the computer which included the new vocabulary. After exposure to a virtual field trip on the computer, students completed a post test administered like the pretest. Students continued to engage in activities around the theme or topic. These activities reinforced the vocabulary or concepts found in the virtual field trip.

Prior to the intervention, the teacher assessed students reading readiness skills through Marie Clay's Concepts of Print checklist, the Wright Group's letter identification assessment, high frequency word assessment, and the Yopp-Singer phonemic awareness evaluation. The Marie Clay's Concepts of Print checklist was substituted for the Wright Group's concept of print because the teacher/researcher determined a more accurate analysis could be accomplished.The teacher instructed students in cooperative learning social skills, and the "drawing to learn" technique. Cooperative learning was new to the students. They needed the social skills necessary to work together on the computer and in cooperative group activities. The drawing technique encouraged the use of diagraming and labeling the parts of the theme picture.

The instructor taught reading using district mandated materials, whole language practices, and large group instruction. The teacher modeled reading

strategies using Big Books. Graphic organizers such as the KWLs or word webs of group generated words about a topic were used to develop or familiarize students with vocabulary. These activities stimulated the students to share any personal experiences. Students received individual instruction in guided reading groups where the instructor would scaffold vocabulary and background knowledge using a variety of subject-related pictures or books. Thematic student books and activities reinforced some of the vocabulary discussed. Teacher directed group discussion that resulted from these activities provided the language exposure to thematic words and concepts.

The thematic units used in this intervention consisted of a predetermined list of vocabulary words associated with each theme or topic, such as pumpkins. (See Appendix A) The students were assigned the task of producing a drawing of the topic in a log (i.e.pumpkins) and completing a semantic map using drawings or associated words.(See Appendix B) The drawing was to include anything they knew about the topic. Prompts were given such as: Where would you find ? (pumpkins), How do (they) look?, or What do you do with (pumpkins)? Students then dictated a journal entry about their drawings to the teacher. (See Appendix C) The teacher-researcher then launched a virtual field trip on the computer consisting of a series of marked web sites about the topic (pumpkins), introducing the students to vocabulary and concepts. Computer concepts were also introduced during the virtual field trip such as scrolling to move the page, moving through the text, and looking for and using the hyperlinks. Students were placed into formal cooperative groups to move through the computer site as an independent activity. An advanced reading student was always placed in a group to help read sight words and model reading strategies.

Once the groups had completed their exploration of the teacher directed sites, the students were placed at the computer using a teacher developed hypermedia

presentation about pumpkins.(See Appendix D) The presentation incorporated appropriate text readability for the students, new thematic vocabulary, and assigned activities. A posttest drawing activity was administered to check for understanding of the concept followed by a dictation by the student to the teacher.(See Appendix E) The teacher-researcher looked for vocabulary growth by number of concepts or vocabulary words the student had used in telling about his or her drawing. The thematic units also consisted of reading books, cooperative group activities, (See sample in Appendix F) and a culminating field trip.

The original time frame for implementation of this intervention was skewed by technology difficulties. Access to the Internet was delayed for six weeks because of a district change in software. This delay caused two complete thematic units, a computer theme unit designed to strengthen and provide greater exposure to the computer, and a timely Olympic thematic unit designed to be used with the Internet to be canceled. In order for implementation of the intervention to move forward, the researcher relied on the level of computer skills developed through students' exposure to a year of computer lab experience in kindergarten and incorporated additional computer knowledge when presenting the thematic unit.

Two proposed activities were suspended. The planned scavenger hunt for theme related items brought from home was dropped after the first unit when only two students responded. The parental response log was also eliminated because of lack of parental response. Of the 18 students involved in this research, 9 came from families where English was not spoken in the home.

In between developed thematic units, incidental topics would come up within the classroom discussion where students' background knowledge was needed. A quick pretest drawing was done, followed by a teacher directed virtual field trip and a

posttest assessment drawing.One example of such an incidental topic was that of a parade. Through classroom discussion, the instructor realized that many children had never attended a parade. A computer search was conducted to find a parade to attend and to describe.

Presentation and Analysis of Results

The Wright Group's Emergent Dictation Assessment was used to determine the students understanding of the reading and writing connection. The teacher-researcher dictated two sentences to the group of 18 students to write. Table 2 and Table 3 illustrates the data collected. In September, 36% of the students demonstrated evidence of understanding some of the reading and writing conventions. Of the total number of students, 64% demonstrated little or no usage for the writing conventions of phonetics, spelling, or writing rules. The students understanding of connecting writing to reading was writing random letters with little connection to the words dictated. The class was retested in January and the number of students who demonstrated satisfactory understanding of the reading and writing connection increased their phonetic awareness 56%, and their spelling 50%.

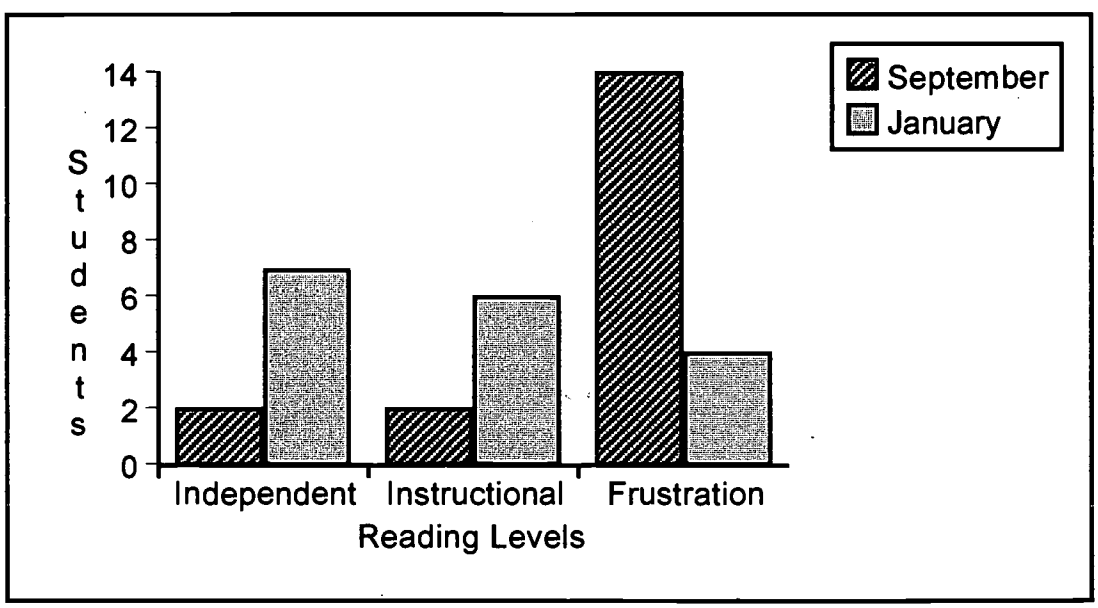
Table 2

Sept. and Jan. Emergent Dictation Assessment Results

	Sept.			Jan.		
	Good	Adequate	No Evidence	Good	Adequate	No Evidence
Phonemic Awareness	3	3	12	10	5	1
Spelling	3	4	11	9	6	1
Writing Rules	0	6	12	1	6	9

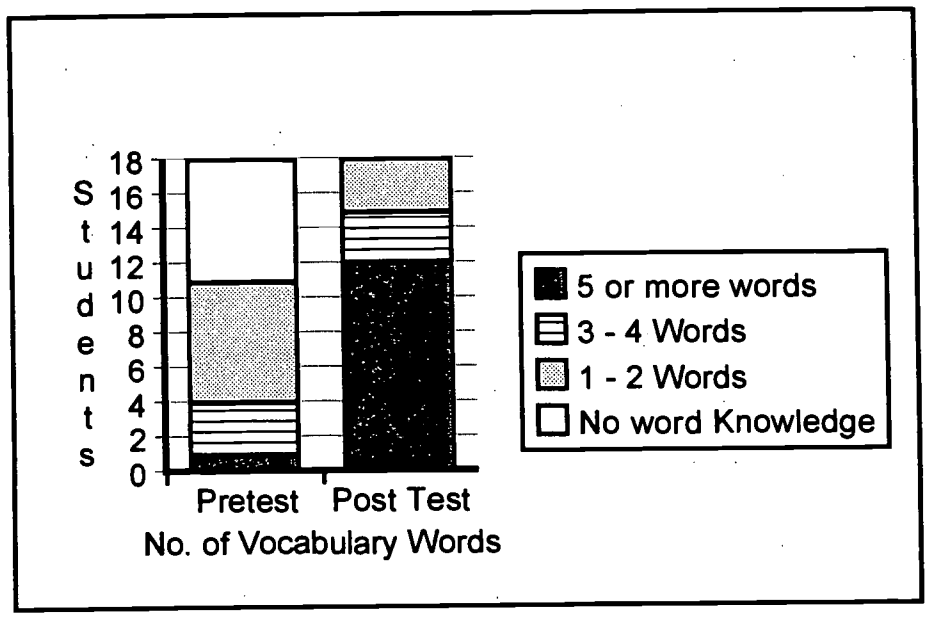
n = 18

Running running records were taken by the teacher-researcher to determine the students reading level development, accuracy, and strategy usage. Figure 6 evidences the students reading levels at the beginning of September and again at the end of January. In September, two students were reading at an independent level and were incorporating good reading strategies. The independent level was also considered to be at grade level by the teacher-researcher. At the instructional level, two students were beginning to incorporate reading strategies, and 13 students were at the frustration level in their reading. Students working at the frustration level signaled little or no knowledge of reading strategies usage. By January, 41% of the class was reading at an independent level or at grade level, while 24% of the students seemed to be struggling to understand most of the strategies. These students were functioning below grade level. For those students making progress towards using strategies, the intervention may have helped increase their word knowledge to achieve the greater accuracy required at the independent reading level.



n = 18

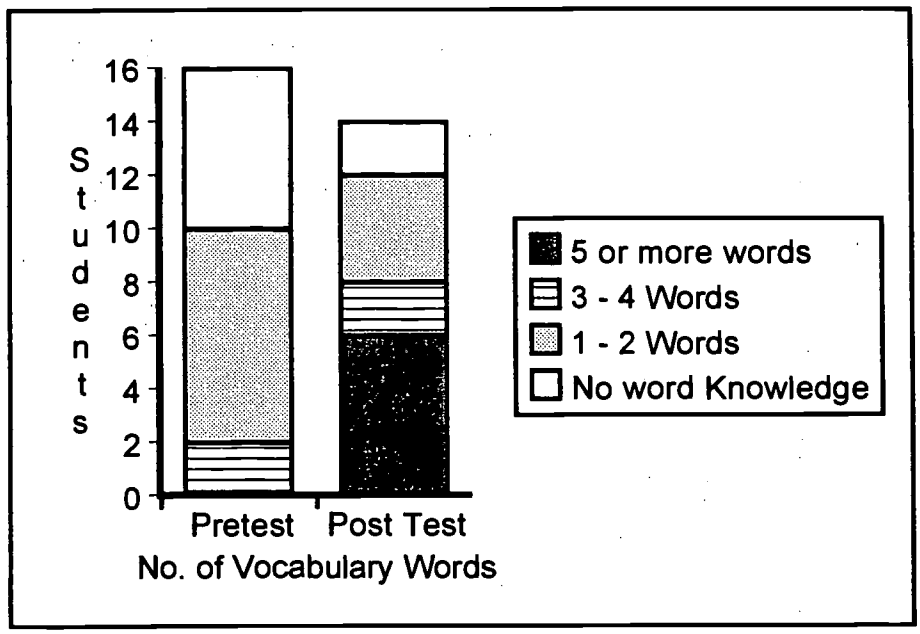
Figure: 6 September and January Reading Levels



n = 18

Figure 7 Theme A: Background vocabulary pretest and posttest

Figure 7 represents the information from the first theme unit presented in the intervention prior to the virtual field trip. A pretest semantic map was completed by the students to measure the amount of background knowledge that the student might possess. (See Appendix A) The students were told they could draw about the theme or write words if they could. The teacher-researcher discussed the drawing with the students to determine known vocabulary or theme knowledge. Students dictated information to the teacher-researcher about their semantic map. On the pretest, 39% of the students seemed to have little word knowledge about the theme that would translate into their drawings. Computer log drawings indicated that 55% of the class could apply some word knowledge to complete a drawing about the theme. The post test drawings showed that 67% of the class could apply a visual representation of 5 or more vocabulary words to their drawings upon completion of the virtual field trip and hypermedia presentation. Drawings of 33% of the students indicated an increased word knowledge of 1 to 4 words.

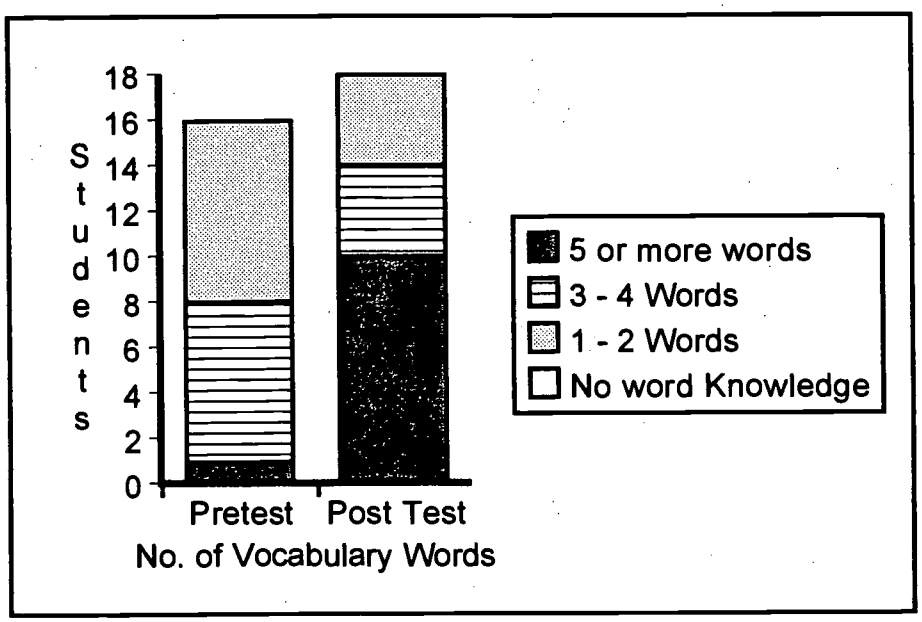


n=18

Figure 8: Theme B: Background vocabulary pretest and posttest

Theme B, as represented by Figure 8, was the second fully developed unit of study presented for this intervention treatment. No student could associate 5 or more words with the theme topic, and 38% seemed to have little word knowledge or understanding. The remaining 62% of the class had between 1 and 4 words they could apply or associate with the theme. The posttest results indicated that 38% of the students could give 5 or more words connected to the theme while 50% of the students could classify 1 to 4 words with the topic theme.

The pretest for Theme C evidenced that most of the students had some vocabulary associated with the topic. However, 44% of those students knew only 1 or 2 words. After the intervention, 56% of the students were able to associate 5 or more words with the theme. Figure 9 indicates that most students made some progress in attaining new vocabulary.



n=18

Figure 9 Theme C: Background vocabulary pretest and posttest

Conclusions and Recommendations

As evidenced by the project results, using virtual field trips to enhance or build background vocabulary may be a viable classroom tool. The average word knowledge gain among the three themes suggested a positive relationship. Forty-nine percent of the students increased their theme vocabulary by 5 or more words. All students showed improved word knowledge. An effective strategy combined the use of an Internet virtual field trip with a hypermedia program presenting similar information but at the students' level. The reinforcement of the vocabulary at their level increased the number of words or concepts used in their drawings. Using the hypermedia program eliminated the distractions that flash up on the Internet and the overwhelming choices of where to go once they arrived at a site. Activities were incorporated into the presentation providing student accountability. Most of the students were highly motivated to use the computer, although a few students were timid. The classroom

was equipped with a computer screen linked to a television that provided access to students discoveries at all times.Students were motivated to try to find the site that another group had encountered and were more likely to stay on task. Students' interpersonal dialogues while at the computer provided good peer interaction. The students' level of questions and comments improved during the classroom discussions that were centered around the virtual field trip.

Through the use of semantic maps, the students developed more confidence in their ability to classify words of a theme. The cooperative social skills taught at the beginning of the year contributed to the congeniality of the computer groups and the cooperative activities. The majority of the students continued the writing structure of a subject, verb, and object as evidenced in the journal writing.The students' adherence to this simplistic syntax did not demonstrate the use of the descriptive vocabulary. One reason for this may be that the Hispanic language structure differs from that of English and the students had difficulty in the translation. Many of the English speaking students' comfort levels were with the use of the casual speaking register.

One recommendation would be to enlist the assistance of other researchers. This researcher found it difficult to manage all the components that went into this study. Compiling a list of suitable sites for virtual field trips, developing a hypermedia presentation, and formulating cooperative learning activities are time intensive aspects of project such as this one. The management and time requirements could be delegated.

Another recommendation would be to use more than one computer. One Internet computer in the classroom created a management dilemma and did not provide enough time for students.to get fully involved in computer related activities. To assign groups of students to one computer two to three times a week was difficult at

the beginning of the year because of the intense pull-out programs. One computer in the classroom did not provide for individualized learning needs.The higher functioning students would have been ready to attempt Incorporating their own researched information on a theme to a hypermedia presentation, where as the lower functioning students needed the benefits of a commercial program or skill building sites available on the Internet. The teacher researcher found it difficult to change the computer programming to meet the needs of the individual groups. The higher level students were not grouped together to see what they might accomplish. A suggestion for this problem might be to use alternate days for the higher level students and lower level students.

In addition, a recommendation would be to consider the reading levels of the students before the teacher directed exploration of an Internet site and to preview the Internet site to paraphrase any information deemed relevant to the theme's objectives as well as to assure of visual appeal. Young students' interest is piqued by the visuals of a site. The students' reading levels and language levels were not developed enough to make good use of the computer presentation of information at the site because many of the sites language was too advanced. This observation also applies to those sites rated for primary level students. One approach for this would be to begin thematic computer studies later in the year.

Another recommendation would be to choose age appropriate themes tailored to the interest levels of the students, and to find Internet sites that are visually appealing to coincide and support the theme. Many sites have extensive information suitable for high school age students but lack the visuals necessary to hold the interest of the young learners.

Of major importance is to know computer capabilities regarding Internet

access time. The researcher used an Apple G3 with a tower and at times the computer was slow connecting to the sites, causing students to lose interest or become disruptive. Bookmarking the sites ahead of time helped but did not entirely take care of the problem. A suggestion would be to design activities students could do while preparing for the virtual field trip connections.

Computer Internet technology and use in the classroom is in its infancy stage. While the Internet has detractors, it also has the greatest potential to lay the world at our students doors. Educators need to embrace this new tool and develop ways to incorporate it into our teaching repertoire. Teachers know students will need computer skills to attain their educational goals as well as their life's goals. Teacher-researchers need to develop ways of accomplishing this successfully. All educators must be willing to take the challenge to create innovative ideas for using technology tools in the classroom.

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Appendix A

Pumpkin Unit Words

seeds

pumpkin

hill

plant

vine

leaves

flower

blossom

bloom

pollen

sprout

green

orange

water

pulp

carve

Jack-o-lantern

round stem

hoe

water can

hose

garden

patch

pound

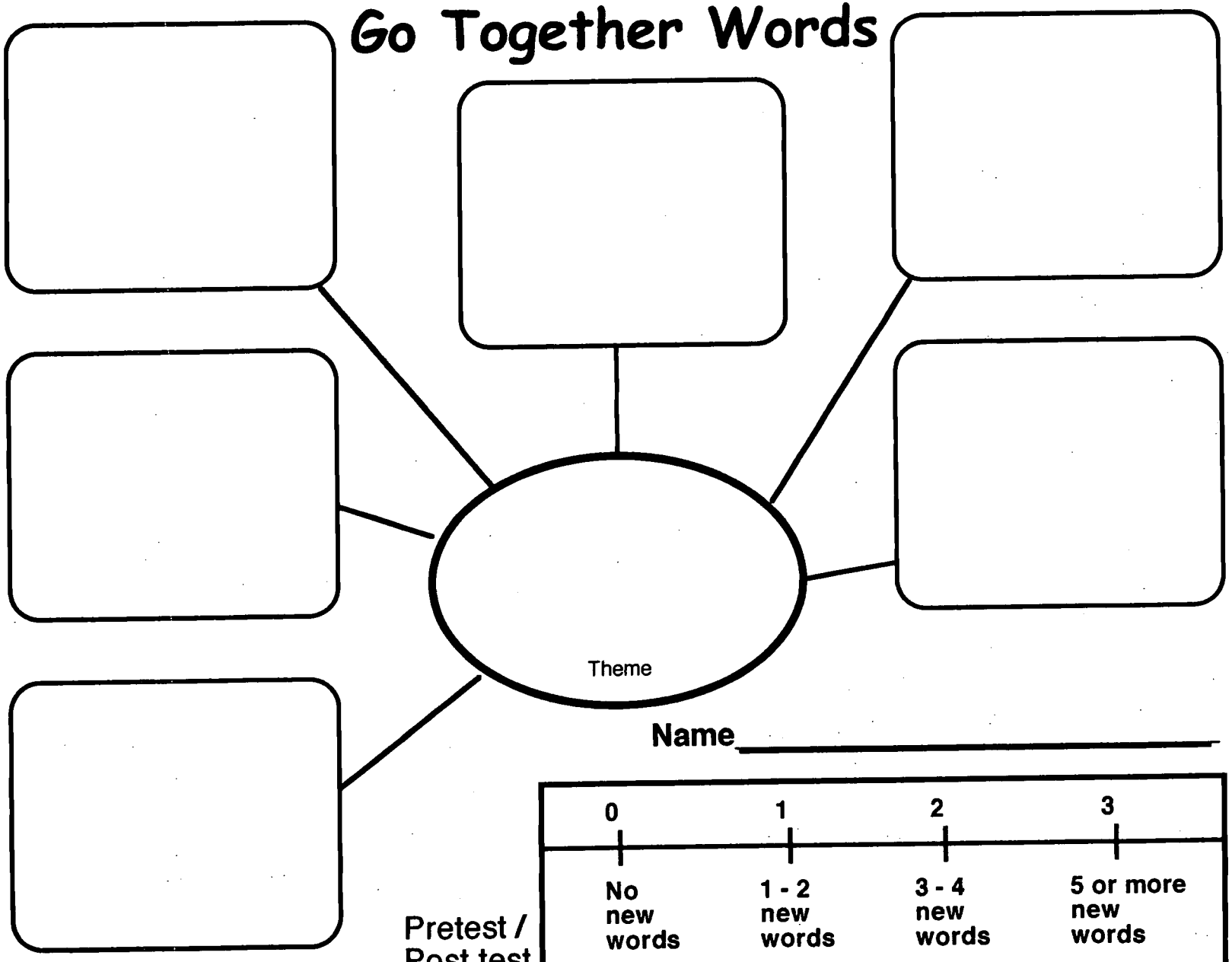
soil

October

Appendix B

Pretest Drawing of _____(theme)
Draw a picture about the theme. Draw what might be seen and/done there.

Go Together Words



Name_____

Pretest / Post test

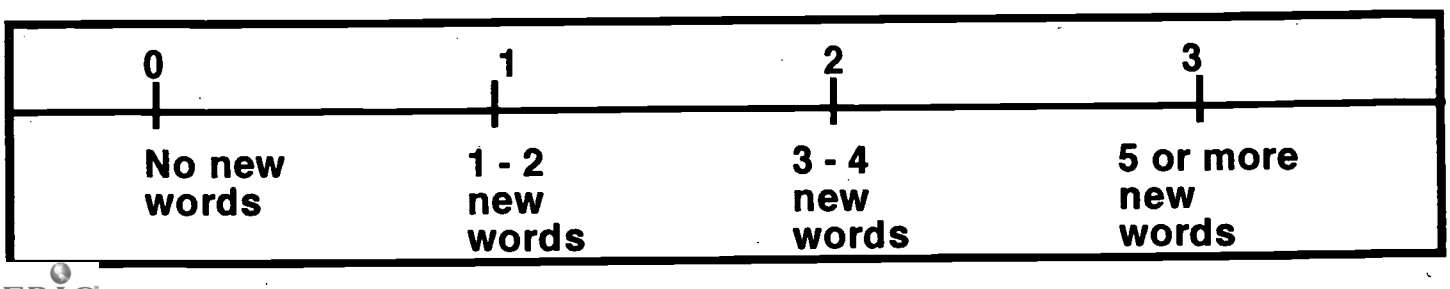
0	1	2	3
No new words	1 - 2 new words	3 - 4 new words	5 or more new words

Appendix C

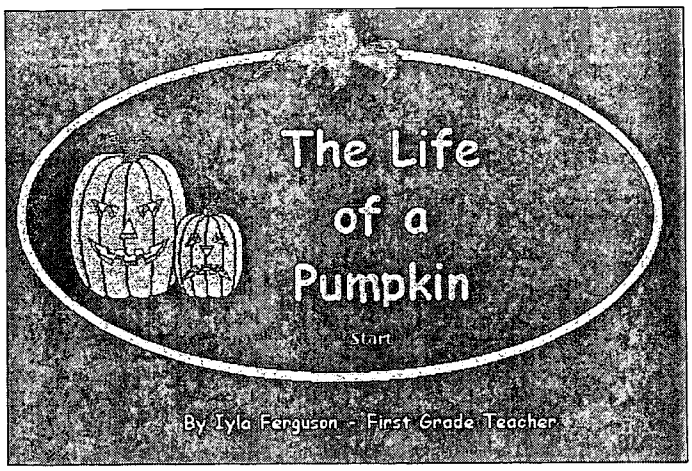
Journal Writing topic _____

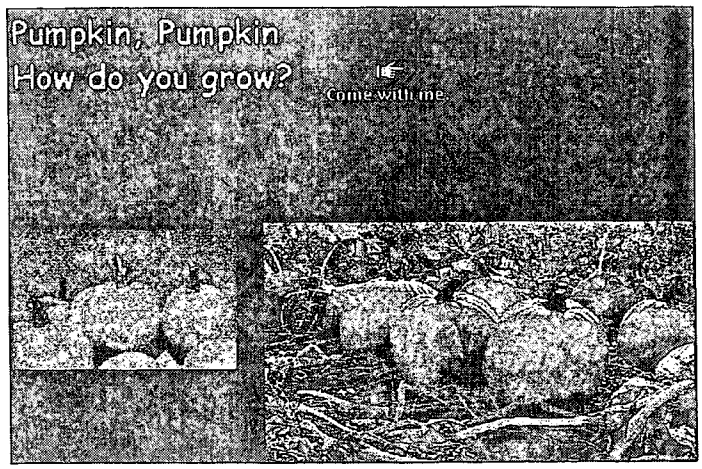
Dictation #1

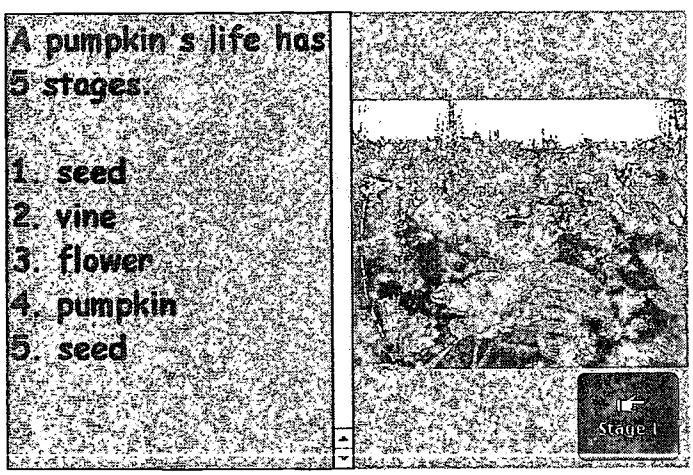
Dictation #2

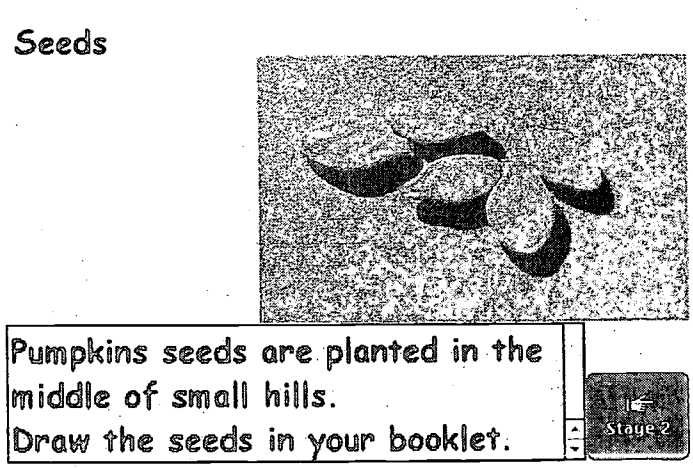


Appendix D


The Life
of a
Pumpkin
Start
By Tyla Ferguson - First Grade Teacher

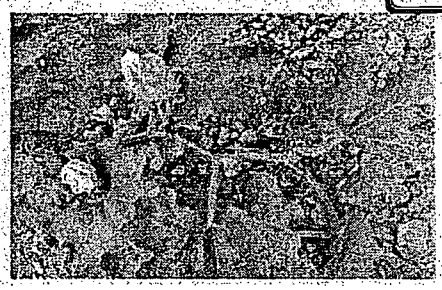

Pumpkin, Pumpkin
How do you grow?
Come with me.


A pumpkin's life has
5 stages.
1. seed
2. vine
3. flower
4. pumpkin
5. seed
Stage 1


Seeds
Pumpkins seeds are planted in the
middle of small hills.
Draw the seeds in your booklet.
Stage 2

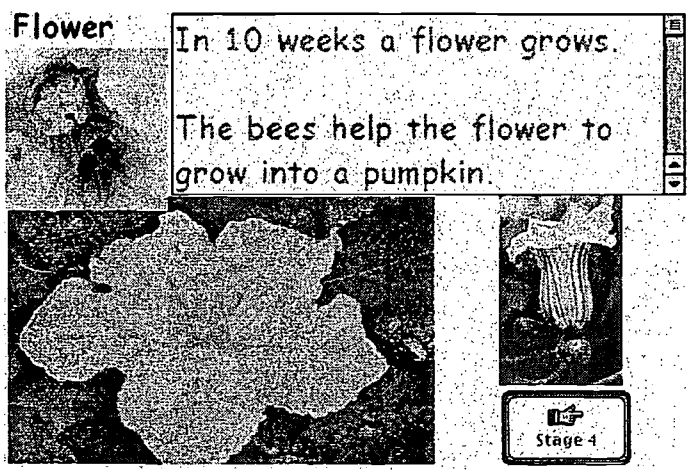
Vine

The vine begins in a little hill, then grows and grows until.....

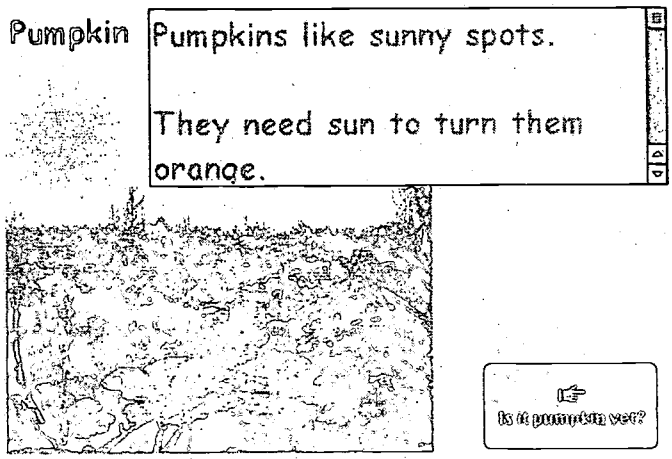


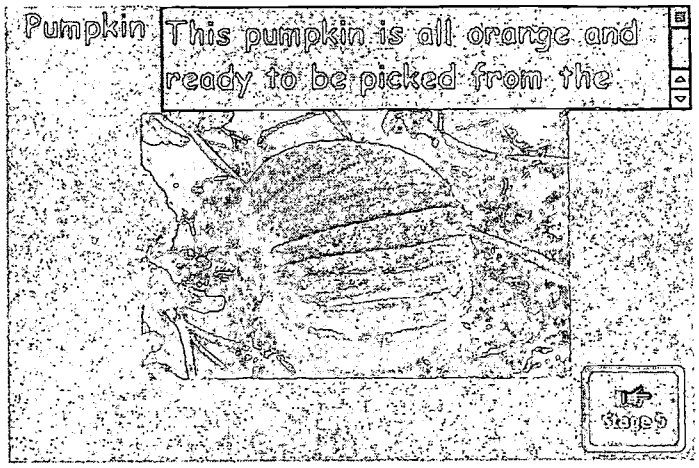
It is a very big vine. Lots of sun and water help it to grow so big.
Draw a vine in your booklet.

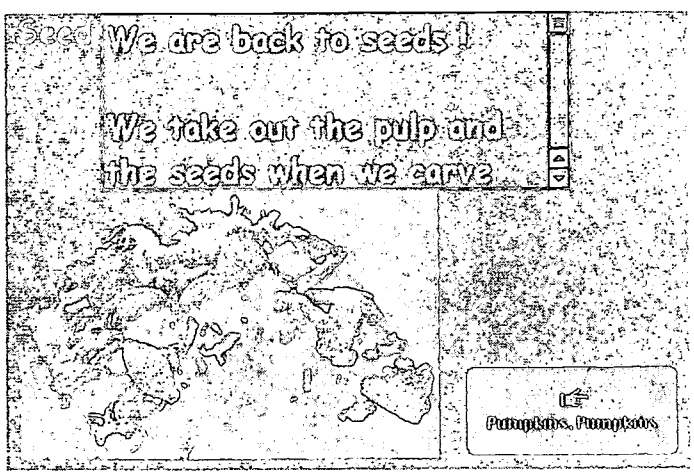
Flower

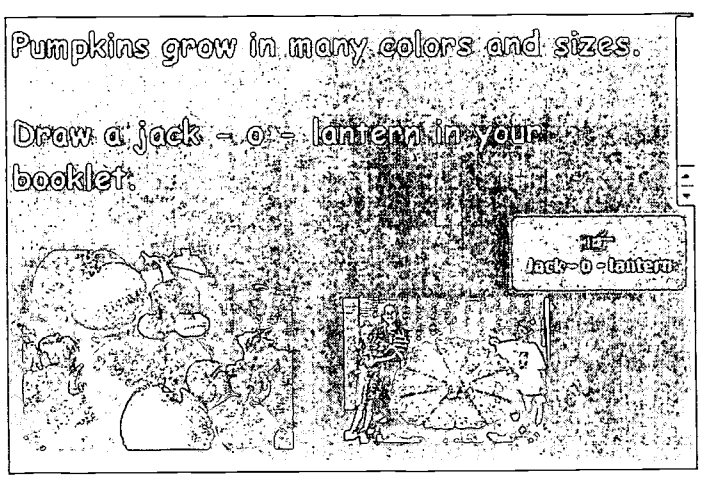


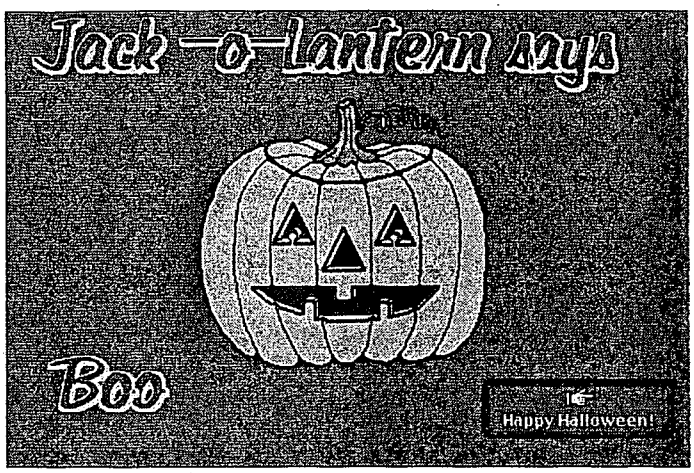
Pumpkin


Pumpkin
Pumpkins like sunny spots.
They need sun to turn them orange.
Is it pumpkin wet?


Pumpkin
This pumpkin is all orange and ready to be picked from the
Step 5


We are back to seeds !
We take out the pulp and the seeds when we carve
Pumpkins, Pumpkins


Pumpkins grow in many colors and sizes.
Draw a jack - o - lantern in your booklet.
Jack - o - lantern


Jack-o-lantern says
Boo
Happy Halloween!

Appendix E

Post test Drawing of _____(theme)
Draw a picture about the theme. Draw what might be seen and/done there.

Appendix F

Theme Name: Pumpkins

Targeted Intelligence: Verbal/Linguistic

Supporting Intelligences: Logical /Mathematical, naturalist, visual/spatial, interpersonal

Thinking Skills: Visualizing, predicting, classifying, sequencing, associating relationships, comparing,

Social Skills: Team building, conflict resolution.

Content Focus: Building students knowledge about pumpkins

Materials: Various books about pumpkins, computer, teacher designed virtual field trip, pumpkins, yard sticks, rulers, tape measures, crayons, pumpkin math sheets

Task Focus: To learn about the growing and harvesting of pumpkins

Products: Create a class book about pumpkins, a pumpkin dictionary, and an advertisement for pumpkins

Problem: Students limited knowledge and vocabulary of pumpkins

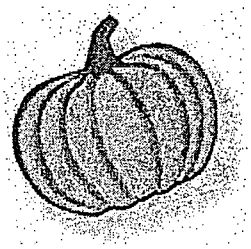
Activities:

1. Take an Internet trip to a pumpkin patch.
2. Read the books about pumpkins.
3. Read about pumpkins on Hypermedia trip in cooperative groups.
    a. Follow activities on computer to create a pumpkin dictionary.
4. Form cooperative groups learning about the math of pumpkins - Use pumpkin math sheets.
5. Visit a real pumpkin patch and compare to Internet trip.

Reflections:

1. In journal: What would you like to know about pumpkins that you didn't learn in class.
2. If you had to do these activities over what would you do differently?
3. During these activities, what did you do well?

Pumpkin, Pumpkin

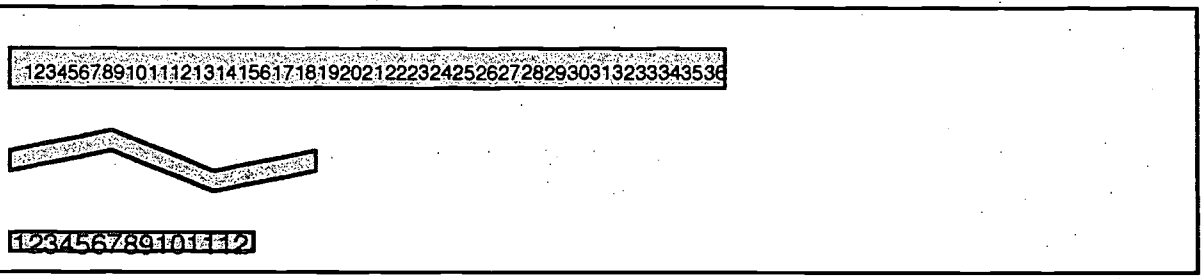


Team : _____ _____

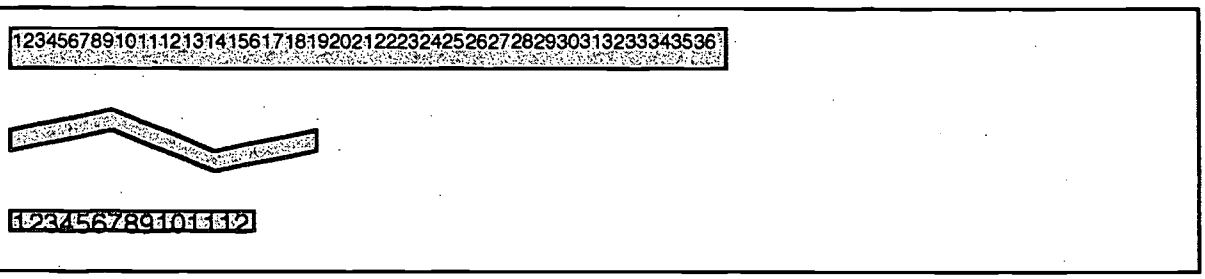
_____

A.

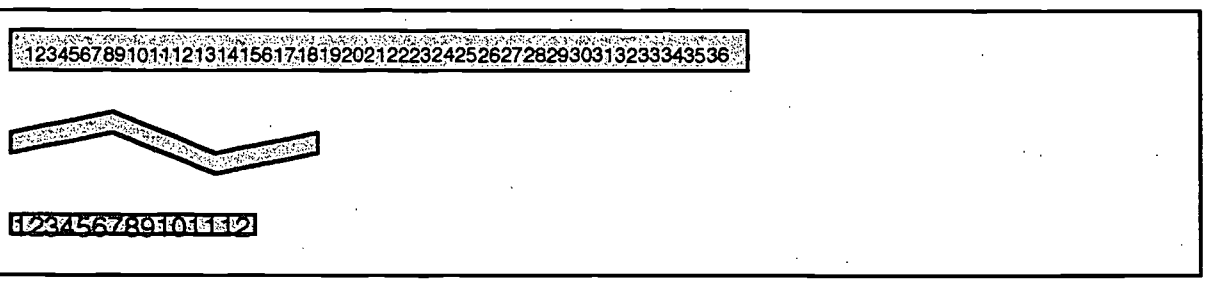
The Best Tool To Measure a Tall Pumpkin



The Best Tool To Measure a Short Pumpkin



The Best Tool To Measure Around a Pumpkin



B.

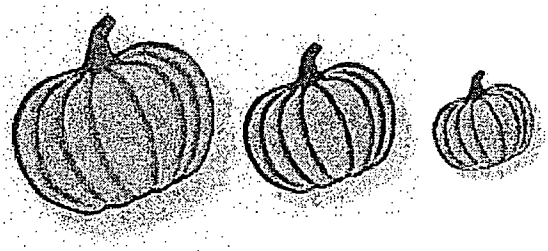
The **storekeeper** will give you a penny for each pound your pumpkin weighs.

P 1 _____ P 2 _____ P 3 _____ P 4 _____

C.

Farmer: How many pennies did your group get all together?

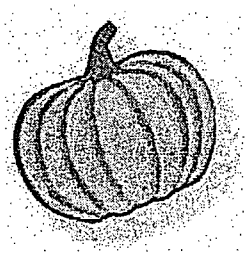
Created by Iyla Ferguson



D. How are your pumpkins the same and different?

same	different

Created by Iyla Ferguson



Pumpkin, Pumpkin

E.

How much did your groups pumpkins weigh all together? _____

How many pennies did your group get all together?_____

F.

Banker : Change as many pennies as you can into nickels

Nickels_____ Pennies_____ left over

Banker : Change as many nickels as you can into dimes

Dimes_____ Nickels_____left over , Pennies_____ left over.

Challenge: What other change can you make ?

G. Together: decide a fair price for each pumpkin?
List 3 reasons why you think they are fair.
Make price tags for each pumpkin?

H. Together on large paper make an ad that the storekeeper could use to sell the pumpkins.

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