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The effectiveness of non-traditional vocabulary instruction in a second-grade inclusion classroom

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THE EFFECTIVENESS OF NON-TRADITIONAL VOCABULARY INSTRUCTION IN A SECOND-GRADE INCLUSION CLASSROOM

by
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ABSTRACT

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The purpose of this experimental study was to determine if non-traditional vocabulary instruction would significantly raise the scores of second-grade students in an inclusion classroom compared to second-grade students whom were taught vocabulary words in a traditional manner. Students were tested in matching vocabulary words to definitions as well as using vocabulary words in a meaningful context. Analysis of the data obtained from the pretest and posttest scores showed that while students in both settings improved in their performances, students who were taught vocabulary words in a non-traditional way, scored slightly higher. Further analysis was conducted to portray that this slight difference was not enough to make the study significant. Implications for teaching vocabulary words are discussed.

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Chapter I
The Scope of the Study

Introduction

What is traditional vocabulary instruction? According to Herman and Dole (1988), traditional vocabulary instruction can be divided into three parts: definitional, contextual, and conceptual. Their research shows that traditional instruction primarily focuses on the definitional and contextual aspects of instruction. Many researchers have studied such definitional and contextual methods and have found limitations (Herman & Dole 1988, Beck, McKeown, & McCaslin, 1983, McKeown, Beck, Omanson, & Pople, 1985, McKeown, 1993, Nist & Olejnik, 1995). Among the plethora of vocabulary researchers, most of their findings point to one common thought: Traditional vocabulary instruction is largely ineffective (Herman & Dole 1988, Beck, McKeown, & McCaslin, 1983, McKeown, Beck, Omanson, & Pople, 1985, McKeown, 1993, Nist & Olejnik, 1995). Stahl and Kapinus (2001) concluded that students will not retain vocabulary words unless they are able to use it readily in their writing and speaking. Unless the students can make connections to the newly acquired words with information or concepts already known, these words will not be retained (Stahl & Kapinus, 2001).

As many researchers have found limitations with the traditional approach to teaching vocabulary, others have found more effective methods. Frequent and varied exposures to words seems to be the most important (Beck, McKeown, & McCaslin, 1983; Graves, 1986; Stahl & Fairbanks, 1986; Nagy & Scott, 1990; McKeown, 1993; Herman & Dole, 1988). Varying techniques that engage the learners as much as possible prove to

be effective as well (Beck, McKeown, & McCaslin, 1983). Blachowicz and Fisher (2006) have created a checklist, which gives suggestions on how to provide a rich and robust vocabulary learning environment, based upon and compatible with previous research.

While much research has been conducted on the limitations of traditional teaching strategies and the use of more effective non-traditional strategies, this study takes it one step further. In this study the effect of non-traditional strategies on students' ability to retain words and use them in context was examined. This was an important study because words guide us through all aspects of life. Words are everywhere and without them, it'd be nearly impossible to communicate efficiently and to express ourselves (Stahl & Kapinus, 2001; Paynter, Bodrova, & Doty, 2005).

Statement of Problem

For many years, teachers have taught vocabulary words in a very traditional way (Brabham & Villaume, 2002; Blachowicz & Fisher, 2006). In the traditional way the teacher introduces a list of about ten words each Monday. Students are instructed to look these words up in the dictionary and write a sentence for each. Typical students copy down the first, or shortest, definition from the dictionary next to each word. They proceed to make up sentences using the words, which are often times, very generic (Brabham & Villaume, 2002; Blachowicz & Fisher, 2006). Often times, the students are not motivated or required to use these words in conversations throughout the school day. Instead, the list of words and definitions are sent home with each child to memorize for the vocabulary test, which usually takes place on Friday. As the following Monday approaches, a new set of words is distributed, and the previous ones were old news. This

has remained a traditional way of teaching vocabulary words for far too long (Brabham & Villaume, 2002; Blachowicz & Fisher, 2006). The problem lies in the fact that old vocabulary words are soon forgotten because the students fail to gain ownership of them (Stahl and Kapinus, 2001). Students don't truly understand what words mean when they have such inadequate exposure to them (Beck, McKeown, & McCaslin, 1983; Graves, 1986; Stahl & Fairbanks, 1986; Nagy & Scott, 1990; McKeown, 1993; Herman & Dole, 1988). Recent researchers have studied the limitations of traditional vocabulary instruction, and found it to be quite ineffective (Herman & Dole 1988, Beck, McKeown, & McCaslin, 1983, McKeown, Beck, Omanson, & Pople, 1985, McKeown, 1993, Nilst & Olejnik, 1995). With such a largely ineffective, traditional way of teaching vocabulary, many questions may begin to formulate. What is a more effective way to teach vocabulary words in an elementary classroom? What strategies will allow students to use words correctly in context? Most importantly, will these non-traditional strategies and methods motivate students to use and retain the words and definitions more than traditional methods?

Hypothesis

It was hypothesized that second-grade students in an inclusion classroom, who received non-traditional vocabulary instruction, would score significantly higher when tested on matching fifteen science vocabulary words to their definitions, than second grade students who did not receive non-traditional vocabulary instruction. It was further hypothesized that second-grade students in an inclusion classroom, who received non-traditional vocabulary instruction, would score significantly higher when tested on using

the fifteen science vocabulary words in context than second grade students who did not receive non-traditional vocabulary instruction.

Limitations

While this study had value in determining the effectiveness of non-traditional vocabulary instruction, there were some limitations of which the researcher had no control over. Because this study was conducted in the student-teaching placement of the researcher, the population of students involved was restricted to second-graders who were learning the fifteen selected vocabulary words in a science unit. The results of this study could be affected by students' prior knowledge of the vocabulary words chosen for examination. To prevent such results from taking place, the researcher tried to choose words in which the students had relatively little or no background knowledge. A pre-test was given to analyze their prior knowledge to make the study more valid.

Another limitation that could not be controlled was the academic level of the children in each classroom. The classroom in which non-traditional vocabulary instruction was administered was a second-grade inclusion classroom, which meant that several of the students had Individualized Education Plan's (IEP's) and were placed in the inclusion room for their comprehension and processing difficulties. The classroom that was used as the control group did not have students with IEP's partake in the study. The students in the control group may have had an academic advantage because of their lack of IEP's implemented for comprehension and processing difficulties.

The final limitation was the way in which the control group was taught their vocabulary words. Because the researcher had no control over how the control group's

words were taught since it was under the instruction of another teacher, this was a limitation.

Definition of Terms

The following terms are defined for this study:

Traditional Vocabulary Instruction: Instruction that focuses primarily on the definitional and contextual aspects of words. Such traditional instruction includes teaching dictionary definitions, synonyms, and phrases that describe a word. It also includes instructing students to use these words in a sentence.

Non-traditional Vocabulary Instruction: Instruction that engages the learner and provides varied and frequent exposure to words and their meanings. Such instruction provides multiple opportunities for students to use words in their expressive and written language, and relates other concepts to words to make connections. Non-traditional instruction includes games, songs, learning centers, and interactive bulletin boards, in which the students have multiple exposures to.

Inclusion Classroom: A classroom in which students of various levels and disabilities are placed in a general education setting with the support of a regular education teacher, as well as a special education teacher. The two teachers work together to provide instruction in whole group, small group, and/or individual settings. This setting is determined by the teachers, parents, and Child Study Team in effort to place a child with a learning difficultly or disability in the least restrictive environment.

Chapter II
Review of the Literature

Introduction

This study was built upon previous research and knowledge about effective vocabulary instruction. In Chapter I, the limitations of traditional vocabulary instruction were discussed, as well as more effective methods. This study sought to determine whether non-traditional vocabulary instruction would foster students' ability to retain words and use them correctly in context. It was hypothesized that second-grade students in an inclusion classroom, who received non-traditional vocabulary instruction, would score significantly higher when tested on matching fifteen science vocabulary words to their definitions, than second-grade students who did not receive non-traditional instruction. It was further hypothesized that second-grade students in an inclusion classroom who received non-traditional vocabulary instruction would score significantly higher when tested on using these fifteen science words in context than second-grade students who did not receive non-traditional vocabulary instruction. The limitations, as well as the definition of terms, of this study can be found in Chapter I.

Importance of Vocabulary Knowledge

It is vital to understand the importance of vocabulary knowledge for this study. According Duin and Graves (1987), "Words embody power, words embrace action, and words enable us to speak, read, and write with clarity, confidence, and charm (p. 312)." Words are everywhere, and without them, it would be a challenge to communicate efficiently and express ourselves (Stahl & Kapinus, 2001; Paynter, Bodrova, & Doty,

2005). Knowledge of vocabulary words can enhance reading comprehension, which in essence, is the goal of many teachers. According to Stahl and Kapinus (2001), "Learning words and their meanings, as well as learning how to learn words on their own, will help students become proficient language users (p. 33)." Using words is important in all aspects of life, from writing and communicating clearly and effectively to interviewing for a job. The knowledge of words is one of the most significant factors in success in school, as well as the real world (Petty, Herold, & Stoll, 1968).

Traditional Vocabulary Instruction and Concerns

Herman and Dole (1988) have explored the notion of teaching vocabulary and have divided instruction into three parts: definitional, contextual, and conceptual. Their research shows that traditional instruction primarily focuses on the definitional and contextual aspects of instruction. Many researchers have studied such definitional and contextual methods and have found limitations (Herman & Dole 1988, Beck, McKeown, & McCaslin, 1983, McKeown, Beck, Omanson, & Pople, 1985, McKeown, 1993, Nist & Olejnik, 1995). Herman and Dole (1988) believe that the definitional approach, which consists of a phrase or synonym to describe a word, is limited because it does not give students the opportunity to fully understand the word (Herman & Dole, 1988, McKeown, Beck, Omanson, & Pople, 1985). They believe that when this definitional approach is used solely by itself, it is ineffective (Herman & Dole, 1988). However, some researchers have shown that this method is not as ineffective when there is prior knowledge of the word or underlying concept (Herman & Dole, 1988, McKeown, Beck, Omanson, & Pople, 1985). In fact, McKeown, Beck, Omanson, and Pople (1985) found

that even partial knowledge of a word can be beneficial with this approach because it sets the stage for encounters that may turn up in the future.

McKeown (1993) examined the definitional approach as well, studying the effectiveness of dictionary definitions, by comparing them to revised definitions. Traditional dictionary definitions have many limitations, such as the tendency to "lead the learner to an inaccurate representation of the meaning or to present information that could not be readily developed into a coherent word meaning (McKeown, 1993, p.19)." McKeown (1993) believed that definitions needed to be revised with a more cognitive perspective so that they'd be easier to understand and students could gain a sense of where and when to use the word. What resulted from McKeown's (1993) study was that students' responses from the dictionary definitions were "unacceptable," whereas the responses from the revised definitions were "distinct," or more geared to the correct definition (p. 26). Nist and Olejnik (1995) studied definitions as well, and found, like McKeown (1993), that revised definitions were more effective than standard dictionary definitions. These studies furthered vocabulary researchers' knowledge that traditional dictionary definitions, as well as providing vocabulary instruction in the traditional way of having students look up words in a dictionary, is largely ineffective (McKeown, 1993, Nist & Olejnik, 1995, Herman & Dole, 1988, McKeown, Beck, Omanson, & Pople, 1985). These findings fostered the researcher to hypothesize that non-traditional strategies in teaching vocabulary would allow students to retain definitions and use words in the correct context within sentences.

Herman and Dole (1988), as well as others (Beck, McKeown, & McCaslin, 1983, Nist & Olejnik, 1995), also explored the contextual method, or the second

traditional approach of teaching vocabulary. Using a contextual approach, words are either defined or illustrated specifically in the text or through clues around the word (Herman & Dole, 1988). Beck, McKeown, and McCaslin (1983) stated more specifically that context can be divided into two different segments: pedagogical or instructional and natural. In the pedagogical or instructional way the key word is clearly defined through the surrounding text, whereas in the natural way, the definition is not specifically taught (Beck, McKeown & McCaslin, 1983). This approach is also limited when it is used as a sole instruction method because of the fact that not all contexts provide the sufficient amount needed to understand a word fully (Beck, McKeown, & McCaslin, 1983). In fact, Beck, McKeown, and McCaslin (1983) found that some contextual information may even be misleading and lead readers to think the keyword means the opposite of the real, true meaning. Stahl and Fairbanks (1986) further suggested that if both definitional and contextual methods are used together, learning will be more effective. Nist and Olejnik (1995) studied adequate definitions, like McKeown (1993) recommended, but combined these definitions with context as well, as Stahl and Fairbanks (1986) suggested. The results that stemmed from Nist and Olejnik's (1995) study show that there was no correlation between the two, "indicating that the combination of strong context and adequate dictionary definitions together did not have a significantly greater effect on word knowledge than did the simple additive effects of context and dictionary (p. 187)." While the strength of the context does make a difference, more research is needed to determine exactly what makes a "strong" context (Nist & Olejnik, 1995, p. 188).

What can be concluded from current research that explores the traditional approach of teaching vocabulary is that it is largely ineffective (Herman & Dole 1988,

Beck, McKeown, & McCaslin, 1983, McKeown, Beck, Omanson, & Pople, 1985, McKeown, 1993, Nist & Olejnik, 1995). Stahl and Kapinus (2001) added that students will not retain vocabulary when the traditional approach is used. They say students need to "own" a word, and to do this, the student needs to be able to readily use it in their writing and speaking (Stahl and Kapinus, 2001, p. 7). The traditional approach to teaching vocabulary is less effective because unless the students can make connections to the newly acquired words with information or concepts already known, these words will escape from their knowledge soon after they look them up (Stahl & Kapinus, 2001). McKeown and Curtis (1987) have previously found that instruction must be knowledge-based, as Stahl and Kapinus (2001) also suggest. They insist that there must be rich ties between new words and previous knowledge in order for traditional instruction to be effective (McKeown & Curtis, 1987).

It is also important to understand that students' abilities within classrooms are extremely varied. Vocabulary and comprehension gaps among them are one of the areas which research has shown needs closer examining (Brabham & Villaume). The area of vocabulary instruction has been declining in importance in the classroom because of the fact that the teachers realize that having students look up words in a dictionary is ineffective (Brabham & Villaume, 2002). Brabham and Villaume (2002) describe how more emphasis is now placed on independent reading, rather than direct vocabulary instruction because of the lack of resources that are available to teachers to teach vocabulary definitions in a more efficient way (p. 264). Some researchers have found that the amount of vocabulary children gain in their elementary years is phenomenal, at an estimated 3,000 words per year (Brabham & Villaume, 2002; Herman & Dole, 1988;

Brett, Rothlein, & Hurley, 1996; Nagy & Herman, 1987). These words are clearly not all learned from direct instruction, yet from incidental learning as well (Brabham & Villaume, 2002; Herman & Dole, 1988; Nagy & Scott, 1990; Nist & Olejnik, 1995). Incidental learning occurs through reading, both aloud and silently, as well as engaging in everyday conversations (Brabham & Villaume, 2002). However, according to Brabham and Villaume (2002), incidental learning should not prevent intentional learning from taking place. Teachers are thus faced with an "instructional dilemma," in which they need to decide what instruction will be most effective for improving their students' comprehension and vocabulary knowledge (Herman & Dole, 1988).

Alternative Strategies for Vocabulary Instruction

While many researchers agree that traditional strategies for teaching vocabulary are ineffective, most believe that frequent and varied encounters with words is one of the most significant factors in learning vocabulary (Beck, McKeown, & McCaslin, 1983; Graves, 1986; Stahl & Fairbanks, 1986; Nagy & Scott, 1990; McKeown, 1993; Herman & Dole, 1988). Further, others have added the importance of varying instructional strategies to teach vocabulary (Duin & Graves, 1987; Nagy & Scott, 1990; Richek, 2005; Stahl & Kapinus, 2001; Blachowicz & Fisher, 2006; Herman & Dole, 1988; Beck, McKeown, McCaslin, 1983). Beck, McKeown, and McCaslin (1983) concluded that vocabulary instruction should engage the students as much as possible. Students should be exposed to a robust vocabulary environment in which learning extends beyond the classroom to use words expressively, as well as in their writing (Beck, McKeown, & McCaslin, 1983). To provide this rich, vocabulary-learning environment, Blachowicz and Fisher (2006) have created a checklist, which is based upon and compatible with

previous research. This checklist recommends that an effective vocabulary environment includes a teacher's love for words in his/her classroom through read-alouds, word of the day activities, word plays, as well as other interactive and engaging ways. It also describes what the vocabulary-rich learning environment should look like, with word walls, charts, word games, books, dictionaries, as well as labels. Blachowicz and Fisher (2006) add that a good vocabulary program should also include conceptual and motivational strategies, frequent exposures, varied assessment, and a way for students to become independent word learners. These are all aspects that the traditional vocabulary instruction often lacks. While Herman and Dole (1988) described the traditional method of teaching vocabulary to primarily use definitional and contextual strategies, they also unraveled a third method described as conceptual strategies, which are used in a more non-traditional approach, and correspond to Blachowicz and Fisher's (2006) checklist.

According to Herman and Dole (1988), conceptual instruction is explained as instruction that focuses on relating other concepts to new words, and determining how these new words fit into the larger context. This method allows a more comprehensive and extensive view of the word to develop, which in turn leads to a more "thorough understanding" of the word being studied (p. 50). To provide this kind of instruction, Herman and Dole (1988) suggest beginning with knowledge that the students already have and connecting it to new information. Through discussion and visual displays, this new knowledge will become more relevant to the students (Herman & Dole, 1988).

Many researchers have taken Herman and Dole's (1988) advice to develop alternative conceptual strategies to teach vocabulary, which are often times quite more motivating than the traditional strategies. Stahl and Kapinus (2001) found that

comparing and contrasting vocabulary can be an effective way to teach new words, as they relate words to previous knowledge. They also believe that this is an excellent way to keep previous vocabulary words in the picture, as frequent exposures to words helps retain information (Stahl & Kapinus, 2001). Concept webs, semantic maps, and other such graphic organizers have become an important alternative strategy as well (Stahl & Kapinus, 2001; Richek, 2005; Blachowicz & Fisher, 2006).

Richek (2005) has found semantic impressions to be quite effective. In this technique, the teacher selects five to twenty words from a text selection and lists them in order as they will appear. The class discusses what they know about these words, and the teacher builds upon their knowledge. Next, as a whole class activity, the students compose a story with the teacher's guidance, using each of these words in the corresponding order. This process allows the students to discuss the meanings of the words before reading them, as well as use and visualize them in context. It is an active, motivating, and engaging strategy to introduce students to new vocabulary words. Reading the selected text will only further enhance their knowledge of the words as they can compare and contrast the word use in each of the two stories (Richek, 2005).

Current Research

Word games, riddles, songs, rhymes, and poems are all non-traditional strategies that engage the learners so that they can understand words on a deepened level through repeated exposures (Richek, 2005; Blachowicz & Fisher, 2006). While researchers have gathered information about non-traditional methods and their effectiveness, they have not fully developed whether these instruction methods will allow students to use words in the correct context more so than students who are given traditional instruction. This study

explored such non-traditional methods, as well as provided a robust vocabulary-learning environment (Blachowicz and Fisher, 2006) to determine the effectiveness of non-traditional vocabulary instruction on students' abilities to retain words and use them in correct context.

Chapter III
Procedure

Introduction

This study was conducted in effort to conclude whether non-traditional vocabulary teaching instruction would foster students' ability to retain vocabulary definitions and use them in a correct context more so than students who received a more traditional approach to vocabulary instruction. In Chapter I, it was previously discussed that teachers have been using a traditional approach to vocabulary instruction for many years (Brabham & Villaume, 2002; Blachowicz & Fisher, 2006). Research has shown that such approaches do not allow students to gain ownership of vocabulary words and insist that unless the students can make connections to the newly acquired words with information or concepts already known, these words will not be retained (Stahl & Kapinus, 2001). It was discussed that non-traditional vocabulary instruction that engages the learner and provides varied and frequent exposure to words and their meanings is more beneficial in students' abilities to learn vocabulary (Beck, McKeown, & McCaslin, 2983; Graves, 1986; Stahl & Fairbanks, 1986; Nagy & Scott, 1990; McKeown, 1993; Herman & Dole, 1988). Using this research, it was hypothesized that in a second-grade inclusion classroom, students who received non-traditional vocabulary instruction would score significantly higher when tested on matching fifteen science vocabulary words to their definitions, than students who did not receive non-traditional instruction. It was further hypothesized that second-grade students in an inclusion classroom who received non-traditional vocabulary instruction would score significantly higher when tested on

using these fifteen science words in context than second-grade students who did not receive non-traditional vocabulary instruction.

Description of Subjects

This study took place within a rapidly growing community, located in Camden County, New Jersey. As of the 2000 census, there were 34,611 people residing in the township: 11,661 households, and 9,002 families (United States Census Bureau). The United States Census Bureau also determined the racial makeup of the township to be 65.5% Caucasian, 29.34% African American, 4.31 % Hispanic or Latino, 1.30% Asian, 0.3% Native American, 0.03% Pacific Islander, 1.58% from other races, and 1.96% from two or more races. The median income for a household in the township is $55,990. The median income for a family is slightly higher with an average earning $62,045. Males have a median income of $43,320 whereas females have an average income of $31,657 (United States Census Bureau).

The township was a pre-kindergarten through grade 12 district, with four elementary schools (grades Pre-K - 2), two upper elementary schools (grades 3 - 5), one middle school (grades 6 - 8), and one high school (grades 9 - 12). This study was conducted in one of the four elementary schools. In this school, 55% of the students were African-American, 36% were Caucasian, 9% were Hispanic, and less than 1% were Asian (Student and Parent Handbook).

This study was conducted within two second-grade classrooms within the township. The first classroom was the experimental group, or Classroom A. This classroom was a second-grade inclusive classroom of eight to nine year-olds. The classroom consisted of twenty-one students, eleven girls and ten boys. Out of these

twenty-one students, all were given permission to partake in the study. Of those that were in the study, thirteen students were African-American, five were Caucasian, and three were Hispanic. Four of the students had learning disabilities and Individualized Education Plans (IEP's) because of their classification as Communication Impaired. These students had processing and comprehension difficulties.

The second classroom that was utilized was the control group, or Classroom B. In this classroom, nineteen students, twelve boys and seven girls participated. Eleven students were African-American, six were Caucasian, and two were Hispanic. None of these students had Individualized Education Plans. Because this classroom was used as the control group of the study, it had no direct instruction from the researcher.

Procedure

Experimental in design, this study followed a quantitative approach. The Pretest-Posttest Control-Group Design was utilized. In such a quantitative design, two groups receive pretests and posttests, however, the manipulation, or treatment, is only provided to the experimental group (Creswell, 2003). The independent variable in this study was the implementation of non-traditional vocabulary instruction methods in Classroom A, where it previously did not exist. The dependent variable was the effect that these non-traditional vocabulary instruction methods had on the students' ability to retain and use the words selected in the correct context. The second classroom, Classroom B, was taught the same vocabulary ways without the implementation of the non-traditional vocabulary methods that existed in Classroom A.

The first step in the research design was the collection of data on the two classrooms' vocabulary program. Using Blachowicz and Fisher's (2006) classroom checklist,

(appendix A) the classrooms were assessed to determine if there was a robust vocabulary-learning environment. This assessment was done to evaluate the importance of vocabulary in the classroom.

The next step was the selection of vocabulary words used for the study. This study concentrated on fifteen vocabulary words from a science unit on "Animals." The words included: *body covering, mammal, bird, breathe, fish, mollusk, reptile, amphibian, insect, spider, reproduce, living, non-living, food-chain,* and *habitat*. In classroom A, these words were taught in a non-traditional way through the use of learning centers, songs, games, pictures, and oral skits.

Before these selected vocabulary words were taught, a pre-assessment was given. (appendix B) This pre-assessment will be referred to as the Vocabulary Word Anaylsis, or VWA, throughout the study. In the VWA, students were to match fifteen definitions with the fifteen vocabulary words. The amount of correctly matched definitions to vocabulary words was recorded for each student. This data was analyzed and each individuals' scores were averaged for a whole class percentage. The next part of the VWA required the students to use each word that they thought they knew in a sentence that would show the reader that he or she knew the meaning of the word. After that, the sentences were rated using a rubric. The rubric was based on a four-point scale. (appendix C) Each sentence that received the highest rating of a three, received one point. The amount of points that each student accumulated was recorded in a class table. Again, these individual scores were averaged to find a whole class percentage.

After the VWA was given, the implementation of non-traditional teaching methods began. The first words that were introduced were *living* and *non-living*. These

words were taught through the use of picture representations of objects that were living and non-living. The term *living* utilizes two other terms: *breathe* and *reproduce.* After discussion of the words' meanings, a chart was made of living vs. nonliving things. Next, a song entitled "Living Things" was taught. (appendix D, Lesson 1) The song reinforced the word's meaning in a catchy, repetitive way. This song was recited about twice a week throughout the unit on animals.

The next word that was introduced was *body covering.* This word was introduced through a discussion of what the students knew about what protects the human body. After this prior knowledge was activated, the word's meaning was made more relevant to the students in terms of animals. Picture representations of animals with different body coverings were shown and discussed. (appendix D, Lesson 2)

The next words that were taught were *mammal* and *bird.* These words were discussed after reading about them with the use of a Venn diagram. This was done as a whole-class activity, but each student had his or her own Venn diagram worksheet. Through this activity, the words *breathe* and *reproduce* were again discussed in correlation with *mammal.* After these new words were introduced, following the previous words, the students played a game of Charades, in which they were called up individually to act-out certain vocabulary words. (appendix D, Lesson 3)

The next two words that were taught in correlation with one another were *fish* and *mollusk.* These words were taught through many visuals. Students shared experiences about seeing different animals that fit into these categories. A new song was introduced, entitled "If You're an Animal and You Know It." (appendix D, Lesson 4) This song taught and reinforced characteristics of mammals, birds, fish, and mollusks.

The next two words introduced in the animal unit were *reptile* and *amphibian.* After reading about these terms, a chart was made in which the class discussed different animals that could be classified under each. "If You're an Animal and You Know It," was again recited, with added verses about reptiles and amphibians. (appendix D, Lesson 5) A morning center was also utilized with these terms, entitled "Reptile/Amphibian Tic-Tac-Toe." (appendix E, Center 1)

The last two classifications of animals, *spider* and *insect* were taught in conjunction with one another. Before and after reading about them, a discussion was held about spiders and insects that they have seen. A tarantula's exoskeleton was shown to illustrate the amount of legs spiders have. (appendix D, Lesson 6) The main point was to have them distinguish between the number of legs each of these animals had because the rest of their characteristics were similar. The students made spider hats with eight legs on them, and insect clips with six legs on them in Centers. (appendix E, Center 2)

The next word that was taught was *habitat.* A brief introduction was given about what the word meant and how it related to animals, as well as humans. The word was then reinforced through a Jig-Saw Lesson of four different habitat centers. (appendix D, Lesson 7) Activities were present for Arctic, Desert, Rainforest, and Mountain habitats.

The last word that was introduced was *food-chain.* Food-chains were made by discussing several animals that depend on each other and connecting paper links to one another to make a "chain." (appendix B, Lesson 8) They were able to make connections to their own lives and observations.

After the eight classifications of animals were introduced as well as the other words pertaining to the unit, several activities were done in centers and as reviews, such

as sorting and grouping animals into categories, and making connections between vocabulary words and their meanings. Games such as Vocabulary Charades, Vocabulary Bingo, Vocabulary Tic-Tac-Toe, and Twenty-Four Questions were all implemented. (appendix F) These games focused on the fifteen vocabulary words of the animal unit.

All fifteen words were continuously discussed throughout the unit, with the intention of having the students use them as much as possible in their oral language. Constant exposure to these words was evident throughout the whole unit with the many games, songs, and activities the students completed in Centers and in Science.

Two weeks after the completion of this unit where non-traditional vocabulary strategies were implemented, the VWA was again delivered to the students. Two weeks after the completion of the control group's unit, the VWA was administered as well. Having identical pre-assessments and post-assessments enabled interpretations to be made about the ability of students to retain and use vocabulary words in context.

Description of Data Collection Instrument

The data collection instrument that was used in this study was the VWA. (appendix B) The VWA was a paper and pencil instrument that consisted of two parts. The first part collected data about each student's ability to match vocabulary words to written definitions. In this part, the fifteen words that were selected for the study were written in a word bank at the top of the page with an assigned letter (a-o). Below, there were corresponding definitions for each of the words in a random order. The directions clearly stated "Match each vocabulary word from the word bank with its definition by filling the letter in the blank."

The second part of the VWA was more open-ended and required students to write a meaningful sentence for each vocabulary word that he or she knew. An example was provided, which put a given word in correct context. This model allowed students to see an example of a word put in rich context within a sentence. The students were instructed to write a sentence for all of the words that they knew the meanings of.

Chapter IV
Analysis of Findings

Introduction

In the previous chapters, it has been discussed that traditional vocabulary instruction has many limitations on students' ability to learn vocabulary words. This study was conducted in effort to conclude whether non-traditional vocabulary instruction would enable students to retain vocabulary definitions and use them in a correct context more so than students who received a traditional approach to vocabulary instruction. This study was based upon two second-grade classrooms located in Camden County, New Jersey. It was hypothesized that second-grade students in an inclusion classroom, who received non-traditional vocabulary instruction, would score significantly higher when tested on matching fifteen science vocabulary words to their definitions, than second-grade students who did not receive non-traditional instruction. It was further hypothesized that second-grade students in an inclusion classroom who received non-traditional vocabulary instruction would score significantly higher when tested on using these fifteen science words in context than second-grade students who did not receive non-traditional vocabulary instruction. The procedure was thoroughly discussed in Chapter III, as well as the description of the Vocabulary Word Analysis, which was used to assess the hypothesis.

Tabulation of Raw Scores

The VWA was administered as a pretest to Classroom A and Classroom B one day before introducing the science unit. This enabled the researcher to gain a perspective

of the students' prior knowledge of the fifteen selected vocabulary words in both classrooms. The VWA consisted of two sections. The first section of the VWA dealt with matching vocabulary words to their definitions. For this section, the experimental group, or Classroom A, scored an average of 53.67 on the pretest. The highest scorer earned an 80, while the lowest scorer received a 13. The control group, or Classroom B, scored slightly lower, with a mean score of 49.53. The highest scorer in Classroom B received an 86, while the lowest scorer earned a 20.

The second portion of the VWA rated the context of the vocabulary words used in sentences. The highest amount of points one could earn on this section was 45. To earn a 45, the student needed to receive a rating of a 3 for each sentence based on the rubric (appendix C). In Classroom A, the average context score on the VWA pretest was 14.38, while the average context score for Classroom B was 22. Although Classroom A scored 4.14 points higher on the vocabulary definitions section of the VWA, Classroom B as a whole earned 7.62 points higher on the context of the vocabulary words used in sentences. Tables 1 and 2 portray the results of the VWA pretest for Classroom A and Classroom B.

table 1
VWA Pretest Scores for Classroom A (Experimental Group)

Student	Vocabulary Definitions Score	Context Score
1	60	24
2	73	21
3	40	9
4	33	3
5	47	15
6	67	22
7	73	4
8	67	17

9	67	26
10	80	9
11	67	13
12	33	3
13	53	19
14	20	16
15	60	10
16	60	12
17	73	24
18	13	19
19	47	6
20	67	11
21	27	19
Mean	53.67	14.38
Standard Deviation	18.84	7

table 2
VWA Pretest Scores for Classroom B (Control Group)

Student	Vocabulary Definitions Score	Context Score
1	27	8
2	40	34
3	47	24
4	20	17
5	47	21
6	67	19
7	40	19
8	60	26
9	80	23
10	86	32
11	60	17
12	53	19
13	20	17
14	53	30
15	47	20
16	47	18
17	47	31
18	33	17
19	67	26
Mean	49.53	22
Standard Deviation	17.55	6.37

Two weeks after the completion of the science unit in both Classroom A and Classroom B, the VWA was administered again as a posttest. Classroom A and Classroom B earned much higher scores on both sections of the VWA as a posttest. For the first section of the VWA, Classroom A received an average score of 95. This was 41.33 points higher than the average of Classroom A's pretest. There were 14 out of 21 students who received all 100 points for this section. The lowest scorer earned 73 points. Classroom B, again, scored slightly lower on this section with an average score of 87.79. The difference between Classroom B's average score for this section from the pretest and posttest was 38.26 points. Twelve out of 19 students earned 100 points in Classroom B. The lowest scorer earned a 40, which was 33 points lower than Classroom A's lowest scorer.

In the second section of the VWA administered as a posttest, Classroom A earned an average of 39.67 points for the context score. This was 25.29 points higher than Classroom A's pretest of this section. There were four perfect scores of 45 within Classroom A. In Classroom B, the average context score was 40.11, which was 18.11 points higher from their pretest average context score. There were three perfect scores of 45 within Classroom B. Tables 3 and 4 show the posttest results of the VWA for Classroom A and Classroom B.

table 3
VWA Posttest Scores for Classroom A (Experimental Group)

Student	Vocabulary Definitions Score	Context Score
1	100	37
2	100	41
3	87	38
4	100	33

5	100	42
6	100	27
7	100	45
8	87	45
9	100	38
10	87	42
11	100	45
12	73	37
13	100	40
14	87	38
15	87	40
16	87	41
17	100	39
18	100	38
19	100	45
20	100	43
21	100	39
Mean	95	39.67
Standard Deviation	7.62	4.2

table 4
VWA Posttest Scores for Classroom B (Control Group)

Student	Vocabulary Definitions Score	Context Score
1	100	37
2	100	41
3	80	37
4	47	30
5	87	40
6	100	45
7	47	38
8	100	44
9	100	36
10	100	45
11	100	39
12	87	40
13	80	35
14	100	44
15	100	41
16	100	45
17	100	43
18	40	39
19	100	42

Mean	87.79	40.11
Standard Deviation	19.9	3.89

Tabulation of the *t*-test

To determine whether the results of the researcher's hypothesis were statistically significant, a *t*-test was run on the data obtained. A *t*-test was run on both sections of the VWA to determine whether the experimental group scored significantly higher on either one of the sections. It was hypothesized that second-grade students in an inclusion classroom, who received non-traditional vocabulary instruction, would score significantly higher when tested on matching fifteen science vocabulary words to their definitions, than second-grade students who did not receive non-traditional instruction. It was further hypothesized that second-grade students in an inclusion classroom who received non-traditional vocabulary instruction would score significantly higher when tested on using these fifteen science words in context than second-grade students who did not receive non-traditional vocabulary instruction. The null hypothesis would state that second-grade students in an inclusion classroom who received non-traditional vocabulary instruction would not score significantly higher in these two areas, than second-grade students who did not receive non-traditional vocabulary instruction.

The *t*-test that was utilized for this study was one-tailed because the researcher expected the results to fall within the extreme 5% of the tail of the normal distribution of the bell curve, which corresponds to the experimental group. The level of alpha for the *t*-test was $p = .05$. The degrees of freedom in this study was 38.

When the *t*-test was run on the first section of the VWA, *t* was calculated to be .16. According to the *t*-table, this score of .16 was not equal or greater than 2.02, thus it

was not statistically significant. When the *t*-test was run on the second section of the VWA, *t* was calculated to be 1.66, which again was not equal or greater than 2.02, thus it was not statistically significant. The null hypothesis was accepted.

Analysis of Data

Although non-traditional vocabulary instruction was not significant in raising the scores on the VWA of second-grade students in an inclusion classroom, the overall averages of the second-grade students in an inclusion classroom improved more so than the second-grade students in a regular education setting. For the first section of the VWA, Classroom A improved by 41.33 points, whereas Classroom B improved by 38.26 points. Likewise, in the second section of the VWA, Classroom A improved by 25.29 points, while Classroom B only improved by 18.11 points. Tables 5 and 6 portray these results.

table 5
Average Pretest/Posttest Improvements in Vocabulary Definitions Scores in Classroom A and Classroom B

	Pretest	Posttest	Improvement
Classroom A	53.67	95	41.33
Classroom B	49.53	87.79	38.26

table 6
Average Pretest/Posttest Improvements in Context Scores in Classroom A and Classroom B

	Pretest	Posttest	Improvement
Classroom A	14.38	39.67	25.29
Classroom B	22	40.11	18.11

Further, on the posttest of the Vocabulary Definitions section of the VWA, Classroom A had one low score of a 73. Six students received an 87, and 14 students received a 100. On the other hand, Classroom B had multiple low scores, much lower than the lowest of 73 in Classroom A. In Classroom B, 3 students received a 47 or lower, 2 students received an 80, 1 student earned an 87, and the remaining 12 students earned a 100. This data allows the researcher to question whether non-traditional vocabulary instruction impacts more learners and their different learning styles than traditional vocabulary instruction.

Chapter V
Summary, Conclusions, and Recommendations

Introduction

The purpose of this experimental study was to determine if non-traditional vocabulary instruction would significantly raise the scores of second-grade students in an inclusion classroom compared to second-grade students in a regular education classroom, whom were taught vocabulary in a traditional manner in a) matching vocabulary words to definitions; and b) using vocabulary words in a meaningful context. This study was conducted because of the growing number of researchers who suggest non-traditional vocabulary instruction has benefits in helping students learn vocabulary words (Beck, McKeown, & McCaslin, 1983; Graves, 1986; Stahl & Fairbanks, 1986; Nagy & Scott, 1990; McKeown, 1993; Herman & Dole, 1988; Duin & Graves, 1987; Richek, 2005; Stahl & Kapinus, 2001; Blachowicz & Fisher, 2006). After data from the pretests and posttests was obtained and analyzed, results portrayed that although non-traditional vocabulary instruction did not significantly raise the scores of the second-grade students in an inclusion classroom, it did bring about a higher average of improvement among those students whom were taught in a non-traditional way.

Summary of the Problem

Traditional vocabulary instruction has been a common occurrence among teachers for many years (Brabham & Villaume, 2002; Blachowicz & Fisher, 2006). Such traditional vocabulary instruction includes looking up words in a dictionary and using them in a sentence on Monday, memorizing the definitions throughout the week, and

taking a quiz on the words on Friday (Brabham & Villaume, 2002; Blachowicz & Fisher, 2006). The problem with this traditional way of teaching vocabulary lies in the fact that old vocabulary words are soon forgotten because the students fail to gain ownership of them (Stahl and Kapinus, 2001). With inadequate exposure to vocabulary words, students will not understand words' true meanings (Beck, McKeown, & McCaslin, 1983; Graves, 1986; Stahl & Fairbanks, 1986; Nagy & Scott, 1990; McKeown, 1993; Herman & Dole, 1988). Because traditional vocabulary instruction has such limitations, this study chose to examine non-traditional vocabulary instruction and its' effects on second-grade students in an inclusion classroom.

Summary of the Hypothesis

It was hypothesized that second-grade students in an inclusion classroom, who received non-traditional vocabulary instruction, would score significantly higher when tested on matching fifteen science vocabulary words to their definitions, than second-grade students who did not receive non-traditional vocabulary instruction. It was further hypothesized that second-grade students in an inclusion classroom, who received non-traditional vocabulary instruction, would score significantly higher when tested on using the fifteen science vocabulary words in context, than second-grade students who did not receive non-traditional vocabulary instruction.

Summary of the Procedure

Two second-grade classrooms were utilized in this study. The experimental group, Classroom A, was a second-grade inclusion classroom. The control group, Classroom B, was a second-grade regular education classroom. Before the fifteen words were taught in either classroom, a Vocabulary Word Analysis, or VWA, was given to test

the students in Classroom A and Classroom B on their knowledge of the vocabulary words that were about to be taught. Classroom A learned the fifteen vocabulary words in a non-traditional way, by use of songs, games, and centers. Classroom B learned the fifteen vocabulary words in a more traditional way. Two ueeks upon completion of the science unit in both classrooms, the VWA was again administered. It was then analyzed to compare and contrast the results from Classroom A and Classroom B.

Summary of the Findings

The VWA consisted of two sections. In the first section, students had to match vocabulary words to their definitions. Classroom A improved an average of 41.33 points from the pretest to the posttest of this section. On the posttest of this section, the average score for Classroom A was 95. The lowest scorer on the posttest from Classroom A was off by 22 points. On the other hand, Classroom B improved with a slightly lower average of 38.2 points. The average score for Classroom B was 87.79. The lowest scorer on the posttest from Classroom B was off by 47.79 points, which is considerably higher than Classroom A's lowest scorer. However, after the *t*-test was run on all of the collected data from the first section of the VWA, the results portrayed that non-traditional vocabulary instruction was not significant in raising the scores of the second-grade students in an inclusion classroom.

In the second section of the VWA, students were to write a meaningful sentence which would allow the reader to know that he or she knew that word's meaning. These sentences were graded by a rubric (appendix C). Again, students in Classroom A improved more than students in Classroom B in regards to their average context score. Classroom A improved by 25.29 points, whereas Classroom B improved by only 18.11

points. A *t*-test was run on the data obtained from the second section of the VWA as well, and again it was noted that non-traditional vocabulary instruction was not significant in raising the scores of second-grade students in an inclusion classroom.

Conclusion Based on Hypothesis

Based on the hypothesis of this study, it can be concluded that second-grade students in an inclusion classroom, who received non-traditional vocabulary instruction, do not score significantly higher when tested on matching fifteen science vocabulary words to their definitions, than second-grade students who did not receive non-traditional vocabulary instruction. It can be further concluded that second-grade students in an inclusion classroom, who received non-traditional vocabulary instruction, do not score significantly higher when tested on using the fifteen science vocabulary words in context, than second-grade students who did not receive non-traditional vocabulary instruction.

Implications and Recommendations

Although this study concluded that non-traditional vocabulary instruction did not significantly raise the scores of second-grade students in an inclusion classroom compared to second-grade students who were taught vocabulary words in a traditional manner, it does lead the researcher to many implications. One of the first observations from the results portrayed the overall greater improvements in Classroom A compared to Classroom B on both sections of the VWA. Through this, the researcher was also able to notice the much smaller gap between the mean average and the lowest scorer in Classroom A compared to the mean average and the lowest scorer in Classroom B for the first section of the VWA. Whether or not it has to do with the non-traditional vocabulary instruction is questionable, but it does let the researcher know that more students were

able to retain vocabulary words two weeks upon completion of the science unit in Classroom A than Classroom B. With a much smaller gap between the mean average and the lowest scorer for the first section of the VWA in Classroom A, it could be implied that non-traditional vocabulary instruction reached more students and their different learning styles than traditional vocabulary instruction did in Classroom B. Although non-traditional vocabulary instruction did not significantly change the way the students performed on the VWA, the researcher still feels that non-traditional vocabulary instruction is more beneficial than traditional vocabulary instruction in enabling students to learn and retain vocabulary words. Like many researchers say, frequent and varied encounters with words is one of the most significant factors in learning vocabulary (Beck, McKeown, & McCaslin, 1983; Graves, 1986; Stahl & Fairbanks, 1986; Nagy & Scott, 1990; McKeown, 1993; Herman & Dole, 1988). Teaching the fifteen science words through games like Vocabulary Charades, Vocabulary Tic-Tac-Toe, Vocabulary Bingo, Twenty-Three Questions, as well using manipulatives, songs, and centers, enabled the second-grade students in the inclusion classroom to be exposed to frequent and varied encounters.

The fifteen words that were chosen for this study dealt with an animal unit in Science. There was a high-level of interest in this topic in both Classroom A and Classroom B. To make the study more valid, it would be recommended to chose words that the students are not as interested in to obtain more relevant data on their ability to retain and connect to the words and their meanings.

References

Beck, Isabel L., McKeown, Margaret G., & McCaslin, Ellen S. (1983, January). Vocabulary development: All contexts are not created equal. The Elementary School Journal, 83 (3), 177-181

Blachowicz, Camille, & Fisher, Peter J. (2006). Teaching Vocabulary in All Classrooms. (3rd ed.) Upper Saddle River, NJ: Pearson Prentice Hall

Brabham, Edna Greene, & Villaume, Susan Kidd. (2002, November) Vocabulary instruction: concerns and visions. The Reading Teacher, 56 (3), 264-268

Brett, Arlene, Rothlein, Liz, & Hurley, Michael. (1996, March). Vocabulary acquisition from listening to stories and explanations of target words. The Elementary School Journal, 96 (4), 415-422

Duin, Ann Hill, & Graves, Michael F. (1987, Summer). Intensive vocabulary instructions as a pre-writing technique. Reading Research Quarterly, 22 (3), 311-330

Herman, Patricia A., & Dole, Janice. (1988, September). Theory and practice in vocabulary learning and instruction. The Elementary School Journal, 89 (1), 42-54

McKeown, Margaret G. (1993, Winter). Creating effective definitions for young word learners. Reading Research Quarterly, 28 (1), 16-31

McKeown, Margaret G., Beck, Isabel L., Omanson, Richard C., & Pople, Martha T. (1985, Autumn). Some effects of the nature and frequency of vocabulary instruction on the knowledge and use of words. Reading Research Quarterly, 20 (5), 522-535

McKeown, M.G., & Curtis, M.E. (1987). The Nature of Vocabulary Acquisition. Hillsdale, NJ: Lawerence Erlbaum Associates.

Nagy, William E., & Herman, Patricia A. (1987). Breadth and depth of vocabulary knowledge: Implications for acquisition and instruction. In M. McKeown & M. Curtis (Eds.), *The nature of vocabulary acquisition* (pp. 19-35). Hillsdale, NJ: Erlbaum

Nagy, William E., & Scott, Judith A. (1990). Word schemas: Expectations about the form and meaning of new words. Cognition and Instruction, 7 (2), 105-127

Nist, Sherrie L., & Olejnik, Stephen. (1995, Spring). The role of the context and dictionary definitions on varying levels of word knowledge. Reading Research Quarterly, 30 (2), 172-193

Paynter, Diane E., Bodrova, Elena, & Doty, Jane K. (2005) For the Love of Words: Vocabulary Instruction that Works. San Francisco, CA: Jossey-Bass

Petty, W., Herold, C., & Stoll, E. (1968). *The state of the knowledge about the teaching of vocabulary* (Cooperative Research Project No. 3128). Champaign, IL: National Council of Teachers of English

Richek, Margaret Ann. (2005, February). Words are wonderful: interactive, time-efficient strategies to teach meaning vocabulary. The Reading Teacher, 58 (5), 414-423

Stahl, Steven A., & Fairbanks, Marilyn M. (1986, Spring). The effects of vocabulary instruction: A model-based meta-analysis. Review of Educational Research, 56 (1), 72-110

Stahl, Steven, & Kapinus, Barbara. (2001, June). Word Power: What Every Educator Needs to Know About Teaching Vocabulary. National Education Association of the United States

Appendix A

Blachowicz and Fisher's Classroom Checklist

HOW WILL I KNOW A GOOD VOCABULARY
PROGRAM WHEN I SEE ONE?
(A Classroom checklist)
By: Blachowicz and Fisher, pg. 15 (2006)

Experimental Group (Classroom A)

Word-Rich Environment

Teacher shows enthusiasm for words and word learning.

___x___ Daily read-aloud
_____ Word of day or word activity of day
___x___ Students indicate teacher *loves* words and word play
___x___ Understands differences *and* connections between spelling, phonics, and vocabulary

Classroom shows physical signs of word awareness.

___x___ Word charts or word walls (showing student input)
___x___ Books on words, word play, specialized dictionaries (where students can easily access them)
_____ Labels in classroom
_____ Word games
_____ Puzzle books and software
_____ Student-made word books, alphabet books, dictionaries, hypercard stacks

Builds the Base for Independence

___x___ Students show enthusiasm for words and word learning and are responsible for their own learning
___x___ Spend part of each day reading on appropriate level
_____ Can name a favorite word book, puzzle activity, and/or word game
_____ Have personal dictionaries or word logs
___x___ Can use dictionary on appropriate level
___x___ Have a strategy for dealing with unknown words
___x___ Have strategies for self-selection and self-study
___x___ Develop a knowledge base for independent strategies (word parts, context, word references, etc.)
___x___ Develop strategies for using knowledge base

Models, Supports, and Develops Good Strategies

___x___ Rich instruction on content area vocabulary words where definitional and contextual information provided
_____ Use of mapping, webbing, and other graphics to show word relationships
___x___ Multiple exposures and chances to see, hear, write, and use new words
_____ Wide reading with follow-up discussion of new words
___x___ Emphasis on students using strategies
_____ Word play and motivation activities

Uses Varied Assessment

___x___ Differ depending on goal
___x___ Differ depending on entry knowledge level of learners
___x___ Assess both depth and breadth

Control Group (Classroom B)

Word-Rich Environment

Teacher shows enthusiasm for words and word learning.

_____ Daily read-aloud
_____ Word of day or word activity of day
__x__ Students indicate teacher *loves* words and word play
__x__ Understands differences *and* connections between spelling, phonics, and vocabulary

Classroom shows physical signs of word awareness.

__x__ Word charts or word walls (showing student input)
__x__ Books on words, word play, specialized dictionaries (where students can easily access them)
_____ Labels in classroom
__x__ Word games
_____ Puzzle books and software
_____ Student-made word books, alphabet books, dictionaries, hypercard stacks

Builds the Base for Independence

__x__ Students show enthusiasm for words and word learning and are responsible for their own learning
__x__ Spend part of each day reading on appropriate level
_____ Can name a favorite word book, puzzle activity, and/or word game
_____ Have personal dictionaries or word logs
__x__ Can use dictionary on appropriate level
__x__ Have a strategy for dealing with unknown words
__x__ Have strategies for self-selection and self-study
__x__ Develop a knowledge base for independent strategies (word parts, context, word references, etc.)
__x__ Develop strategies for using knowledge base

Models, Supports, and Develops Good Strategies

__x__ Rich instruction on content area vocabulary words where definitional and contextual information provided
__x__ Use of mapping, webbing, and other graphics to show word relationships
_____ Multiple exposures and chances to see, hear, write, and use new words
_____ Wide reading with follow-up discussion of new words
_____ Emphasis on students using strategies
_____ Word play and motivation activities

Uses Varied Assessment

__x__ Differ depending on goal
__x__ Differ depending on entry knowledge level of learners
__x__ Assess both depth and breadth

Appendix B

Vocabulary Word Analysis (VWA)

Directions: Match each vocabulary word from the word bank with its definition by filling the letter in the blank.

Word Bank:

a. body covering	b. mammal	c. bird	d. fish
e. mollusk	f. reptile	g. amphibian	h. insect
i. spider	j. breathe	k. reproduce	l. living
m. non-living	n. food-chain	o. habitat	

1. An animal that lives or breathes underwater _____

2. The natural place where an animal lives _____

3. Has a soft body and a hard covering with 1 or 2 shells _____

4. Something that helps protect animals, like scales, fur, and shells _____

5. Something that can eat, breathe, reproduce, and grow is _____

6. Shows how living things get energy from their food so that they can move and grow is the _____

7. To have offspring, or children _____

8. An animal that has feathers, wings, and a beak _____

9. Something that does not eat, breathe, reproduce, or grow is _____

10. Has 8 legs and a hard covering _____

11. Has scaly skin and lays eggs _____

12. To take in and let out air _____

13. Has 6 legs and a hard covering _____

14. Breathes with lungs and has hair or fur _____

15. Breathes with gills. Its' babies change. _____

Directions: Write a sentence using each word.

Example

Animal: My favorite kind of animal is a dog.

1. Body Covering:

2. Mollusk:

3. Spider:

4. Non-living:

5. Mammal:

6. Reptile:

7. Breathe:

8. Food-chain:

9. Bird:

10. Amphibian:

11. Reproduce:

12. Habitat:

13. Fish:

14. Insect:

15. Living:

Appendix C

Vocabulary Word Analysis (VWA) Rubric

Vocabulary Word Analysis (VWA) Sentence Rubric

0	1	2	3
Student did not use the vocabulary word in a sentence at all; he/she left it blank.	Student used the vocabulary word in a sentence, however, it is used in an incorrect context; he/she did not grasp the meaning of the word.	Student used the vocabulary word in a general sentence that makes sense but does not let the reader know that he/she maintains meaning of the word.	Student used the vocabulary word in a meaningful sentence that lets the reader know that he/she understands the context of the word.

Appendix D

Lesson Plans

Lesson One: Living Vs. Non-Living

PRIOR TO LESSON:

I. Lesson Topic and Grade: Living and Non-living Things, 2nd grade

II. Material and Advance Preparation:

- Pictures of living things, such as animals, people, flowers, and plants
- Pictures of non-living things, such as desks, pencils, food, and clothes
- Chart paper, divided into two columns: living/non-living
- "Living Thing" song, see attached

III. Advance Specialized Knowledge: All of the picture representations of living and non-living things will be items that the students have daily contact with, or frequent exposure to. They must be able to make connections to their personal lives and be able to compare and contrast.

IV. Lesson Objectives/Standards: Students will be able to distinguish between living and non-living things by making a chart, examining pictures, and singing a song about living things. Students will also be able to define breathe and reproduce.

Standard 5.5 – All students will gain an understanding of the structure, characteristics, and basic needs of organisms and will investigate the diversity of life.

B. Diversity and Biological Evolution

1. Develop a simple classification scheme for grouping organisms.

2. Recognize that individuals vary within every species, including humans.

DURING LESSON:

V. Anticipatory Set: I will call on one student to come up to the front of the classroom. I will then hold up a puppet. Students will be asked to compare and contrast the student and the puppet. After accepting correct responses, I will prompt the students in telling me what makes the student alive and what makes the puppet not alive. This will lead to the teacher definition of a living and non-living thing.

VI. Input and Modeling: I will explain to the class that a living thing is something that can eat, breathe, reproduce, and grow. We will go through the terms *breathe* and *reproduce* together, since they have not been taught. I will write each term and definition on the overhead. To *breathe* is to take in and let out air. I will have the students breathe deeply for a couple of seconds to demonstrate understanding. I will then show that *reproduce* means to have offspring, or children. I will explain that all living things have the ability to reproduce. I will then explain to the class that a non-living thing is

something that can not eat, breathe, reproduce, and grow. I will bring out the puppet again. I will ask if the puppet eats like we do. I will also ask if it can breathe, get taller or bigger, and if it can have babies.

VII. Checking for Understanding: To check for understanding, I will simply listen to the answers the students respond with to the above questions. I will check to make sure they know what the terms living and non-living mean by showing pictures of each and having them respond by saying "living" or "non-living."

VIII. Guided Practice: I will make a chart in the front of the room with two columns: Living and Non-living. I will ask students to give me examples of each. We will develop a chart, with about five to seven items in each column. Depending on the weather and time permitting, I will take the students outside to continue our list and name some more living and non-living things, such as different animals, trees, plants, playground equipment, cars, etc.

IX. Closure: I will wrap up the lesson by passing out a song, entitled "Living Things." (See attached) This song describes living things in a musical way to the tune of "Grand Old Flag." The students and I will sing the song, which reinforces the definition of living things. After the song is over, I will ask students for the definition of a living thing, non-living thing, reproduce, and breathe to conclude the lesson. I will then explain the homework.

X. Independent Practice: For homework, the students were to go home and make a list of five different living things and non-living things that they see on an everyday basis.

Living Thing
To the tune of "Grand Old Flag"

You're a living thing,
We see you around.
You can eat,
You can breathe,
You can grow!
You can reproduce…
There's no excuse!
And these are
The things that we know…
You're a living thing,
You move all around
Animals are living things!
No matter what animal you are
You will eat, you will breathe, & you will grow!

Lesson Two: Body Covering

PRIOR TO LESSON:

I. Lesson Topic and Grade: Body Coverings, 2nd grade

II. Material and Advance Preparation:

- Blackboard
- Pictures of animals with different body-coverings, such as hair, fur, shells, skin, and scales.
- Science Horizons Book, by Silver Burdett & Ginn
- Glitter (Scales)
- Yarn (Hair)
- Cotton Balls (Fur)
- Empty Dixie Cups or similar hard item (Shell)

III. Advance Specialized Knowledge: Students have been previously introduced to the terms living and non-living things, as well as breathe and reproduce. They have been taught that all animals are living things.

IV. Lesson Objectives/Standards: Students will be able to define *body-covering* and discover that it is a way scientists group, or classify animals. Students will be able to name different kinds of body-coverings, such as hair, fur, shells, skin, and scales. Students will be able to name at least three animals that have each kind of body-covering.

Standard 5.5 – All students will gain an understanding of the structure, characteristics, and basic needs of organisms and will investigate the diversity of life.

B. Diversity and Biological Evolution

1. Develop a simple classification scheme for grouping organisms.

2. Recognize that individuals vary within every species, including humans.

DURING LESSON:

V. Anticipatory Set: Students will be asked to stand up. I will have all of the boys go to the front of the classroom and all of the girls go to the back of the classroom. I will then tell all of the boys wearing red to make their own group in the front, and all the girls wearing pink to make their own group in the back. I will then have students sit down and ask them to discuss what I just had them do. I will listen to their responses and accept appropriate answers.

VI. Input and Modeling: After discussing possible answers, I will explain that the reason I did this was because I was showing them what it means to classify, or group different things together based on a similarity. I will then tell the class that scientists classify, or group animals in different ways as well and that we will learn about one of these ways today.

VII. Checking for Understanding: To check for understanding of what it means to classify, or group animals, I will develop a student-generated list of animals on the blackboard. I will then divide them into groups of four to five to classify these animals based on similarities, in effort to see if they group the animals according to similarities.

VIII. Guided Practice: After discussing different ways the students came up with to classify the animals we had listed on the board, I will discuss that one way scientists classify animals is by what kind of body-covering they have. I will ask the students if they can think of any body-coverings the animals on the board have. After hearing responses, I will have the students open their books to page thirty-two, to begin reading about body-coverings. We will read about body coverings together, discussing different examples such as fur, shells, and scales.

IX. Independent Practice: The students will use the generated list of animals on the blackboard and pick one for each body-covering that was discussed: hair, fur, shells, and scales. Students will take a piece of paper and divide it into four sections by folding it twice. In each square, the students will write one of the four body-coverings that was discussed and a picture of an animal that can represent that body-covering. Different materials will be provided, such as glitter, yarn, cotton balls, and Dixie cups to make the different body coverings on the animals. (See Material and Advance Preparation)

X. Closure: Picking from sticks, selected students will share their drawings of the four animals with different body-coverings. I will reemphasize that grouping animals by their body-coverings is something that scientists do!

Lesson Three: Mammals vs. Birds

PRIOR TO LESSON:

I. Lesson Topic and Grade: Mammals/Birds, 2nd grade

II. Material and Advance Preparation:

- Blackboard
- Overhead
- Science Horizons Book, by Silver Burdett & Ginn

III. Advance Specialized Knowledge: Students have been previously introduced to the terms living and non-living things, as well as breathe and reproduce. They have been taught that all animals are living things and can be classified by their body-coverings.

IV. Lesson Objectives/Standards: Students will be able to define the terms *mammal* and *bird,* and will be able to compare and contrast them. Students will be able to name at least three examples of mammals and three examples of birds.

Standard 5.5 – All students will gain an understanding of the structure, characteristics, and basic needs of organisms and will investigate the diversity of life.

B. Diversity and Biological Evolution

1. Develop a simple classification scheme for grouping organisms.

2. Recognize that individuals vary within every species, including humans.

DURING LESSON:

V. Anticipatory Set: To begin, I will ask the students to recall a way that we can classify animals. The response to look for will be body-covering. I will then proceed to tell the students that today we will learn about two different groups of animals that have different body-coverings: hair/fur and feathers. I will ask the students if they know what two groups of animals we will learn about.

VI. Input and Modeling: Together as a class, we will read about mammals and birds in the students' Science Horizons book by Silver Burdett and Ginn on page thirty-six. This section will cover characteristics about each animal.

VII. Checking for Understanding: To check for understanding, I will prompt the students with questions throughout the reading, such as:

1. Can you name some mammals?
2. Are we mammals?

3. What makes birds different from mammals?
4. Does a frog fit into either of these groups? Why or why not?
5. Do mammals and birds reproduce the same way?

VIII. Guided Practice: As a class activity, I will guide the students in making a Venn diagram of mammals and birds. I will have an overhead of a Venn diagram, and each student will receive his or her own worksheet of a Venn diagram. I will ask for students' input on some similarities and differences of the two animals we just discussed, and we will fill in our Venn diagram accordingly.

IX. Independent Practice: As a motivating activity, I will have the students take a piece of paper and fold it in half. On the top of one half, they will write "Mammals" and on the other half, "Birds." I will explain that we will have a contest to see who can come up with the most animals that fit under each group of animals within five minutes. I will scan the room as the children are writing their response to check their work and make sure they are working individually.

X. Closure: To close the lesson, I will make a chart on the board just like the students did at their desks. I will have the students exchange papers with another classmate so that no student will add additional answers. I will go around the room and ask each student for ideas of animals that they or their classmate put under each heading. I will tell them that if the paper they have in front of them listed such an animal to put a star. I will keep adding to the chart in the front of the classroom until all students' responses are given. I will then have the students tally up the amount of stars that their classmate received and we will find our winner!

Lesson Four: Fish and Mollusks

PRIOR TO LESSON:

I. Lesson Topic and Grade: Fish and Mollusks, 2nd grade

II. Material and Advance Preparation:

- Blackboard
- Science Horizons Book, by Silver Burdett & Ginn
- Print-outs of Fish and Mollusks
- Song- "If You're an Animal and You Know It"

III. Advance Specialized Knowledge: Students have been previously introduced to the terms living and non-living things, as well as breathe and reproduce. They have been taught that all animals are living things and can be classified by their body-coverings. They have also learned two out of the eight groups of animals, mammals and birds, and are aware that there are six more groups that they will be learning about.

IV. Lesson Objectives/Standards: Students will be able to review vocabulary words by playing Charades. The students will also be able to define the terms *fish* and *mollusk*, and will be able to provide examples of each, as well as compare and contrast them.

Standard 5.5 – All students will gain an understanding of the structure, characteristics, and basic needs of organisms and will investigate the diversity of life.

B. Diversity and Biological Evolution

1. Develop a simple classification scheme for grouping organisms.

2. Recognize that individuals vary within every species, including humans.

DURING LESSON:

V. Anticipatory Set: To review the vocabulary and concepts taught so far throughout this unit, I will describe each vocabulary word one at a time, and have students raise their hand to give me the answer. As they answer each description, I will write that vocabulary word on the board. I will do this until we have all seven vocabulary words on the board: living, non-living, breathe, reproduce, body-covering, mammal, and bird. I will then add two more to the board: fish and mollusk. I will ask the students what they know or think they know about either of these terms and listen to the responses.

VI. Input and Modeling: We will read from Science Horizons by Silver Burdett and Ginn about fish and mollusks on page forty-one. I will guide them with questions about each type of animal throughout the reading, such as:

1. How are mammals and fish different? (How they breathe; body-covering; etc.)
2. Would fish be able to live on land? Why or why not?
3. Can you think of an example of a mollusk that isn't in the book?
4. How are fish and mollusks similar? How are they different?

VII. Checking for Understanding: After reading the selection on fish and mollusks, I will show the class print-outs of different fish and mollusks. I will have them say "fish" or "mollusk" as a whole class while I flip through and show each picture.

VIII. Guided Practice: I will give each student a picture of a fish, mollusk, bird, or mammal. I will go around the room and have each student tell me what group of animal their picture is. I will then pass out a song, entitled "If You're An Animal and You Know It." (attached) As a class, we will come up with motions to go along with each animal in the song. For instance, for the section of the song about mammals that says "breathe with lungs," the students will come up with a motion that shows mammals breathing with lungs. After coming up with motions for each part of the song, I will guide the students in singing the song as a class to the tune of "If You're Happy and You Know It." For whatever animal their picture portrays, I will guide them in standing up at that part of the song and following the motions we made up as a class. After singing the song once and getting the hang of it, I will give students ten-seconds to switch pictures with a classmate and will countdown to zero until all students are back at their seats. Again, we will sing the song and follow the motions accordingly.

IX. Closure: After the students have finished singing the song the second time, I will close the lesson by again, going around to each student and having them show their picture to the class and classify it into the correct group of animal.

X. Independent Practice: For homework, the students will be asked to use five out of the nine vocabulary words we have discussed so far and write a paragraph or story that ties them altogether.

Lesson Five: Reptiles and Amphibians

PRIOR TO LESSON:

I. Lesson Topic and Grade: Reptile and Amphibians, 2nd grade

II. Material and Advance Preparation:

- Blackboard
- Science Horizons Book, by Silver Burdett & Ginn
- Song- "If You're an Animal and You Know It"
- Overhead

III. Advance Specialized Knowledge: Students have been previously introduced to the terms living and non-living things, as well as breathe and reproduce. They have been taught that all animals are living things and can be classified by their body-coverings. They have also learned four out of the eight groups of animals: mammal, bird, fish, and mollusk, and are aware that there are four more groups in which they will learn about.

IV. Lesson Objectives/Standards: Students will be able to distinguish between reptiles and amphibians and name at least three characteristics of each. Students will also be able to review previous vocabulary and concepts taught throughout the unit by playing Charades and singing a song.

Standard 5.5 – All students will gain an understanding of the structure, characteristics, and basic needs of organisms and will investigate the diversity of life.

B. Diversity and Biological Evolution

1. Develop a simple classification scheme for grouping organisms.

2. Recognize that individuals vary within every species, including humans.

DURING LESSON:

V. Anticipatory Set: To open up the lesson, I will have all nine vocabulary words that have been previously discussed on the blackboard: living, non-living, breathe, reproduce, body-covering, mammal, bird, fish, and mollusk. I will then tell the class that we will review these words by playing Vocabulary Charades, and I will pick students' names from sticks to come up to the front of the classroom, whisper one of the words on the board in my ear, and act it out for the class without talking. The class will be asked to raise their hand to guess which vocabulary word the student is acting out. After all nine words are performed, I will explain that we are going to be learning about two new groups of animals today: reptiles and amphibians.

VI. Input and Modeling: Using the overhead, I will write the word Reptile on the transparency. I will ask the students if they know anything about reptiles. If they provide me with correct answers, I will write them on the transparency. I will then add information that I want the students to know about reptiles to the transparency. We will follow this procedure for Amphibians as well. Next, we will read about reptiles and amphibians in Science Horizons by Silver Burdett and Ginn, starting on page forty-five.

VII. Checking for Understanding: I will ask questions throughout the reading, making connections to the other groups of animals that we have discussed thus far as well including:

1. How are reptiles and amphibians similar to any other groups of animals we've talked about?
2. How are reptiles and amphibians different?
3. Would a frog be an amphibian or a reptile?
4. What would it feel like to touch a reptile? How about an amphibian?

VIII. Guided Practice: Using the same song that was taught in the prior lesson, I will guide the students into making up two new stanzas: one for reptiles and one for amphibians! I will guide them into thinking of a specific characteristic that pertains to each of these groups of animals so that we can put it to the tune of our song.

IX. Closure: Upon completion of our new verses, I will pass out pictures again, this time including pictures of reptiles and amphibians as well, and the students will act out the motions of the song according to the animal picture that they are given. We will switch pictures and sing again with the remaining time.

X. Independent Practice: Each student will be required to divide a piece of paper in half and write "Reptile" on the top of one half and "Amphibian" on the other. They will be required to:

1. Draw a picture of an animal that fits into each group and label it.
2. Write three characteristics about each group in the correct section.

If You're an Animal and You Know It
(To the tune of "If You're Happy and You Know It")

If you're a mammal and you know it, breathe with lungs.
If you're a mammal and you know it, breathe with lungs.
If you're a mammal and you know it,
And you have the hair to show it,
If you're a mammal and you know it, breathe with lungs.

If you're a bird and you know it, flap your wings.
If you're a bird and you know it, flap your wings.
If you're a bird and you know it,
And you have feathers to show it,
If you're a bird and you know it, flap your wings.

If you're a fish and you know it, breathe with gills.
If you're a fish and you know it, breathe with gills.
If you're a fish and you know it,
Then swim around and show it,
If you're a fish and you know it, breathe with gills.

If you're a mollusk and you know it, your body's soft.
If you're a mollusk and you know it, your body's soft.
If you're a mollusk and you know it,
You sometimes wear a shell to show it,
If you're a mollusk and you know it, your body's soft.

If you're a reptile and you know it…

If you're an amphibian and you know it…

The last two stanzas will vary upon what your class comes up with!

Lesson Six: Spiders and Insects

PRIOR TO LESSON:

I. Lesson Topic and Grade: Spiders and Insects, 2nd grade

II. Material and Advance Preparation:

- Tarantula Exo-skeleton
- Pictures of spiders and insects
- Science Horizons book by Silver Burdett and Ginn

III. Advance Specialized Knowledge:

IV. Lesson Objectives/Standards: Students will be able to distinguish between spiders and insects by the amount of legs each has, as well as name similarities between the two groups of animals.

Standard 5.5 – All students will gain an understanding of the structure, characteristics, and basic needs of organisms and will investigate the diversity of life.

B. Diversity and Biological Evolution

1. Develop a simple classification scheme for grouping organisms.

2. Recognize that individuals vary within every species, including humans.

DURING LESSON:

V. Anticipatory Set: I will have each student close their eyes. I will paint an image in their mind by talking about different insects and/or spiders that they may see on a daily basis. For instance, "Close your eyes. Imagine you are at a picnic. You lay down a blanket on the grass and start bringing out the food from your cooler. All of a sudden, you notice that you aren't the only one that is hungry! An animal has decided to join you. He's black, but sometimes a shade of brown or red, and has six legs. It looks like he has three circles as body-parts. Who is he?" I will have the students open their eyes and take a guess. This answer is ant. I will do this for several different insects and for a spider in general, and then ask the students if they know of any difference between spiders and insects.

VI. Input and Modeling: I will explain that the main difference that they need to know about spiders and insects is that spiders have eight legs and insects have six legs. Aside from that, these two groups of animals have many similarities, and we will read about them in the Science Horizons book by Silver Burdett and Ginn.

VII. Checking for Understanding: During the reading, I will prompt the students with questions about spiders and insects, as well as questions that allow them to make comparisons with the other groups of animals we've discussed. Sporadically and consistently, I will ask different students how many legs a spider and/or insect has, to keep them on their toes and make sure they understand this main difference. Questions to ask during the reading include, but are not limited to:

1. Do spiders and insects have the same kind of body-covering as mollusks?
2. How are spiders and insects similar to birds?
3. How are spiders and insects different?

VIII. Guided Practice: I will show different pictures of spiders and insects one at a time in the front of the classroom and have the students respond by saying "spider" or "insect." This will allow me to get a sense of how well they can distinguish between the two groups of animals.

IX. Closure: As a fun and culminating activity, I will then show the class an exo-skeleton of a tarantula and have them say whether a tarantula is a spider or an insect and state how they know. I will walk around the classroom and allow each child to take a closer look at this exo-skeleton and explain how a tarantula sheds its skin every so often and this is what it leaves behind. I will also explain how some spiders are good, even though they look scary, because they eat some of the insects that eat plants that we eat! After each child has had a chance to take a closer look at the spider, I will explain that we will be making Spider hats and Insect clips in Centers the following day.

X. Independent Practice: The students will complete their independent practice as an activity in Centers the following day. This center is described in appendix E, Center 2.

Lesson Seven: Habitats

PRIOR TO LESSON:

I. Lesson Topic and Grade: Habitats, 2nd grade

II. Material and Advance Preparation:

- Four signs made from posterboard or other material with the following habitats written on them: Arctic, Rainforest, Desert, and Mountains
- Computers
- Worksheets (attached)

III. Advance Specialized Knowledge: Students will have to know what a house or home is and understand that these are places that they live. They have learned about all eight groups of animals, which they will need to know in order to distinguish different homes for these animals. Students will have to know the basics on how to use a computer and click on links.

IV. Lesson Objectives/Standards:

Standard 5.5 – All students will gain an understanding of the structure, characteristics, and basic needs of organisms and will investigate the diversity of life.

B. Diversity and Biological Evolution

1. Recognize that different types of plants and animals live in different parts of the world.

DURING LESSON:

V. Anticipatory Set: I will have the students think about some of the places animals live, and listen to their responses. I will then explain that all animals need a place to live in order to survive and that this place is called a "habitat."

VI. Input and Modeling: After explaining the term habitat, I will describe how through the lesson, the students will learn about four different habitats: Mountains, Arctic, Rainforest, and Desert. I will tell them that they will become an expert on one of these habitats and will report back to the class at the end of the lesson on what they learned. This is when I will describe each center to the students so they are familiar with the requirements. After explaining them, I will divide the class up into these four centers and let them get to work.

Rainforest Center: I will have the students use the computer and go to the website christiananswers.net/kids/sounds.html to listen to sounds from the rainforest. On this

website, they will encounter a variety of sounds that can be heard from within a rainforest. It will allow them to see what kinds of animals and plants can be found in the rainforest. After they have explored the website, they will be required to draw a picture of what they think a rainforest would look like based on all the sounds they heard.

Mountains Center: I will have the students in this center also use the computer to go to the website k12.nf.ca/sjis/landhabitat/mountain/index.html to explore the different animals that live in mountains. They will be asked to look at each animal and write down similarities that they notice between all of them.

Arctic Center: Students in this center will need the following materials: Scholastic Instructor Reproducible worksheet entitled "Animals of the Arctic Tundra," (attached) as well as scissors and a brad to fasten two circles together. Students w ill be required to cut out the two circles and two flaps where it is instructed to do so on the worksheet. They will be instructed to fasten the top circle over the bottom fact circle with a brad. When this is completed, they will have a spinner, which will teach them about four different animals that live in the Arctic.

Desert Center: In the desert, the students will first sing a song entitled "The Animals in the Desert" from kcls.org. This song will lead them through several verses and describe four different animals that live in the desert. After singing the song, the students will complete a Word Search, created by abcteach.com, which has the students find twelve words that pertain to the desert.

VII. Checking for Understanding: To check for understanding, before the students are assigned centers, I will have students repeat back directions of what they are to do at each center. I will ask the students what we will learn about from each center to check to understand that they know they will be learning about the animals that live in these four habitats.

VIII. Guided Practice: After explaining the centers, I will walk around each center and guide students with their work at that assigned station. I will ask them what kind of animals they have discovered that live in their habitat. I will make sure they are staying on task and completing their assignments.

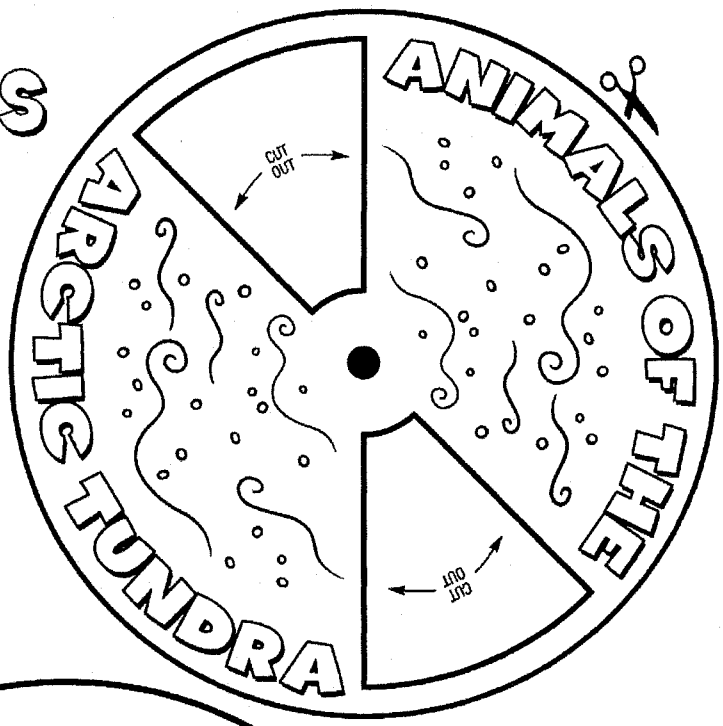
IX. Independent Practice: When it appears that most students have completed the work at each center, I will have the students return to their seats. Starting with one of the habitats, I will have each child assigned to that habitat tell the class something that they learned about that habitat and animals that live there. Each student will be required to tell the class at least one important fact about the habitat or describe an animal that lives there and why they think this animal is able to survive there.

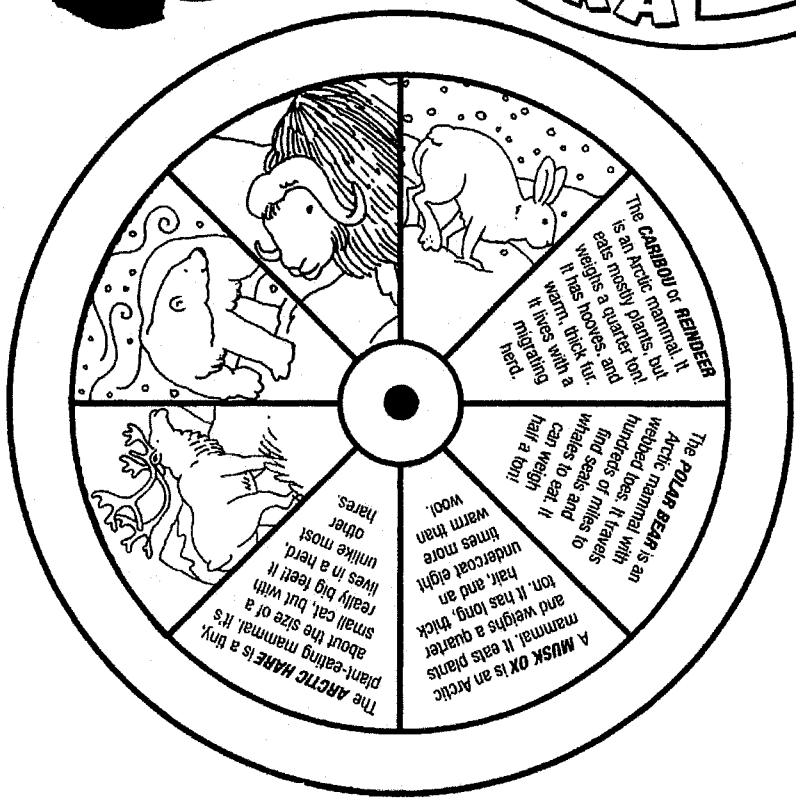
X. Closure: After every student has talked about his or her habitat, I will close the lesson by reviewing the term "habitat," and explain that we only learned about four habitats, but there are many more. I will tell the class that the activities for each of the habitats that we learned about will be kept in a bin, so if they have free time and would like to learn more

about any of the other habitats that they didn't get to become an "expert" on, they still can!

INSTRUCTOR REPRODUCIBLE

ANIMALS of the ARCTIC TUNDRA





Directions

1. Cut out both circles, then cut out the window shapes on the top circle. Fasten the top circle over the bottom fact circle with a brad.

2. To use the spinner, move the wheel's top circle so that the windows align. Facts about each Arctic animal will appear in the window.

3. Make another animal-fact spinner with new animals! Trace the bottom wheel on paper and cut it out. Draw your own animals, and write facts in the sections. Use the top wheel for the windows.

"The Animals in the Desert"
Adapted from kcls.org
Sung to the tune of "The Wheels on the Bus"

The coyote in the desert howls Awwwooooowww
Awwwooooowww
Awwwooooowww
The coyote in the desert howls Awwwooooowww
All night long!

The rattlesnake in the desert goes hiss hiss hiss
Hiss hiss hiss
Hiss hiss hiss
The rattlesnake in the desert goes hiss hiss hiss
All night long!

The jackrabbit in the desert hops like this
Hops like this
Hops like this
The jackrabbit in the desert hops like this
All night long!

The roadrunner in the desert runs fast like this
Fast like this
Fast like list
The roadrunner in the desert runs fast like this
All night long!

The animals in the desert live in a hot, hot place
Hot, hot place
Hot, hot place
The animals in the desert live in a hot, hot place
All night long!

Desert Word Search
Adapted from abcteach.com

Desert

M W B F F D Y Q P T E U X H F
Y S A N D A M W R K T D W B K
O T O T H K B Q A S O O O T Z
B M U C E P D N I X Y J P B L
C W U U G R S B R Y O O O O X
Q A Q H A E O P I R C Z P X V
M N C Z L B Z A E W X N U U M
G S I T C E N F D T P X Q I R
J L T A U W M E O R H D R F L
D A T I S S R A G E U V L N S
R P P O J W H C C S Z N N V F
Y C R C N R N N C E E E N U R
E P U V Y D S P V D O Y Z E C
O V Z F I I G J Q B W J Q Y R

Bobcat	Cactus	Camel	Coyote
Desert	Dry	Lizard	Prairie dog
Rattlesnake	Roadrunner	Sand	Water

Appendix E

Centers

Center One: Reptile and Amphibian Tic-Tac-Toe

Materials:

- 8 ½ x 11 inch Tic-Tac-Toe boards (divided into nine equal segments)
- Multiple pictures of different reptiles and amphibians that fit into the Tic-Tac-Toe squares. Ex: Snakes, Frogs, Toads, Newts, Alligators, Lizards, etc.

How to Play:

1. You will need 2 players per Tic-Tac-Toe board.
2. Assign each player as either a "reptile" or an "amphibian."
3. Lay out the pictures of the reptiles and amphibians, and have students collect all animals that fit under their classified group.
4. Assign one player to go first and place their picture of either a reptile or an amphibian on the board. Take turns going back and forth between each player.
5. The object of the game is to get three reptiles or three amphibians in a row.

Center Two: Spider Hats and Insect Clips

Materials:

- Long strips (about 2" thick) of black construction paper for each child, that will fit around his/her head
- Shorter strips (about 1" thick) of black construction paper (eight for each child), that will represent the legs of the spider
- Googly eyes (two for each child)
- Stapler
- One clothespin for each child
- Multi-colored construction paper
- Oval-shaped tracers (about four or five), slightly larger than the clothespin
- Glue
- Scissors
- Pipe Cleaners

Directions for Spider Hats:

1. Each student receives a long strip of black construction paper. The teacher should measure it around the child's head and then staple it together to form a circle.
2. Instruct each student that the shorter strips represent the spiders legs. Ask them how many they will need to put on their hat. Answer: Eight
3. Students will glue four legs on each side of the hat.
4. Students will glue googly eyes in the front of the hat to represent the spider's eyes.
5. Let the hats dry, and then have students wear them and be spiders!

Directions for Insect Clips:

1. Each student receives a clothespin.
2. Have students choose their choice of colored construction paper (one piece can be used for several students.)
3. Have the students take turns tracing the oval shape onto construction paper.
4. The students should cut out their oval shape and glue it to the clothespin so that no part of the clothespin is showing.
5. Have students choose one pipe cleaner and cut it into the number of legs insects have (six).
6. Instruct the students to glue three legs on each side of the oval shape.
7. Students may glue googly eyes and decorate their insect clips.
8. Let the clips dry, and clip away!

Appendix F

Games

Description of Games

Vocabulary Charades: Vocabulary Charades was played just like ordinary Charades. The vocabulary words that were taught in this study were the ones that were "acted out." In Charades, you can not talk or write down anything. You must simply perform gestures and motions to get others to guess what vocabulary word you have. One student was called up to the front of the classroom at a time, while the rest of the class remained seated at their desks and raised their hand if they thought they knew the vocabulary word.

Vocabulary Bingo: The students made Bingo boards with nine equal squares. In each square, the students chose nine out of the fifteen vocabulary words from this study, and wrote down one of them in each square. The students also had Bingo chips on their desks. I had incomplete sentences written down in a brown paper bag that the students drew from.

The following sentences were utilized:
1. If polar bears didn't have a _____ of fur, they would be cold! (Body-Covering)
2. Flowers, trees, animals, and people, are _____ things. (Living)
3. My cat is living, but its toys are _____. (Non-Living)
4. A clam, snail, and octopus are examples of _____. (Mollusks)
5. A ____ would never be able to survive on land. (Fish)
6. Unlike birds who have feathers, a _____ has fur or hair. (Mammal)
7. A _____ uses its beak to eat food. (Bird)
8. A tadpole changes into a frog because it is an _____. (Amphibian)
9. Snakes and lizards are _____ and have scaly skin. (Reptiles)
10. All living things can _____, or make more of itself. (Reproduce)
11. A camel's _____ is the desert. (Habitat)
12. The sun gives energy to the grass, which gives energy to the cow, which gives energy to us! This is an example of the _____. (Food-chain)
13. When we inhale and exhale, we _____. (Breathe)
14. A grasshopper and a ladybug are examples of an _____. (Insect)
15. Unlike an insect that has six legs, a _____ has eight legs. (Spider)

Each time one of these sentences was read, the students had to raise their hand to fill in the blank and answer it. If the student had that vocabulary word on his or her board, he or she would place a Bingo chip on top of it. Three in a row (horizontally, vertically, or diagonally) won! These boards were utilized several times during class time, as well as during free time.

Vocabulary Tic-Tac-Toe: This game was utilized for comparing and contrasting reptiles and amphibians. One 8 ½ by 11 inch Tic-Tac-Toe board is needed for two players. Multiple pictures of different reptiles and amphibians that fit into the Tic-Tac-Toe squares are also needed. Examples of these animals include snakes, frogs, toads, newts, alligators, lizards, etc. Two players are needed. Each player was assigned as either a "reptile," or an "amphibian." The students needed to lay out the pictures of reptiles and amphibians and collect all the animals that fit under their classified group.

One player will go first and place a picture of either a reptile or an amphibian on the board. The players will take turns going back and forth between each player, just like in ordinary Tic-Tac-Toe. The object of the game is to get three reptiles or three amphibians in a row.

Twenty-Three Questions: Twenty-three questions can be adapted to any subject or material. In this study, the game focused upon the fifteen vocabulary words that were studied, as well as other information that pertained to the Science Unit. To play the game, you must make sure that every student has a card on his/her desk. I used index cards and had them laminated. On the plain-side of the index card, you will write a one-word answer. On the lined-side of the index card, you will write a question or an incomplete sentence. On the index card that begins the game, only one side will be written on. For instance, I gave one student with the first card, which stated "I am an animal that has eight legs..." Whoever had the answer to that question, which happens to be spider, would read aloud "Spider," and then turn their card over and read aloud the question on the back. The game will continue in this manner until the last card is read. The questions and answers that I used are listed below. To motivate the students, I timed the game during the first round. Afterwards, we switched cards and tried to break our time. It is a game where everyone is involved and needs to pay attention!

1. I am an animal that has eight legs...
2. SPIDER, I am an animal that lives and breathes underwater...
3. FISH, I am an animal with a soft body and a hard covering with one or two shells...
4. MOLLUSK, I am one way scientists group animals...
5. BODY-COVERING, I am the part of the tadpole that changes as it becomes a frog...
6. GILLS, I am a reptile that lays eggs...
7. SNAKE, A whale and a bat are examples of...
8. MAMMALS, I am a mammal, so I breathe with...
9. LUNGS, I am a group of animals that lives part of its life in water and part of its life on land...
10. AMPHIBIANS, I am the kind of animal with wings and feathers...
11. BIRDS, Besides fish, I am another group of animals that has scaly skin...
12. REPTILES, I am a kind of insect...
13. BUTTERFLY, I am the natural place where an animal lives...
14. HABITAT, I am an insect, so how many legs do I have?
15. SIX, Something that can eat, breathe, reproduce, and grow is...
16. LIVING, Instead of laying eggs, mammals have...
17. LIVE BIRTH, Before I am a frog, I am a...
18. TADPOLE, I am a kind of body-covering...
19. FUR, I am an example of a mollusk...
20. SNAIL, I am the only mammal that flies...
21. BAT, I am a bird, so I lay...
22. EGGS, I am the habitat where polar bears live...
23. ARCTIC, I just finished the game so everyone say "Yay!"