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Dual Language: It's Effectiveness and How it Impacts Learning With Regards to Science Taught Thematicly in Elementary

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DUAL LANGUAGE: IT'S EFFECTIVENESS AND HOW IT IMPACTS LEARNING
WITH REGARDS TO SCIENCE TAUGHT THEMATICLY IN ELEMENTARY

A Project Report

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CHAPTER 1

Introduction

Bilingual education is a controversial issue. Demographic changes demand reexamination of what we are doing in schools. The federal court case *Castaneda v. Pickard* (1981) provides guidelines that school districts should select educational programs of theoretical value for English learners, implement them well, and follow long term progress to assure equal educational opportunity.

Since the author currently works in the State of Washington in the Yakima School District, for Robertson Elementary the author has chosen to look at the demographics for the state of Washington, Yakima School District, and Robertson Elementary thus showing the need for increased bilingual education. Washington state currently has as of October 2003 1,021,309 students enrolled and of those students 12.3% are Hispanic (OSPI, Washington State Report Card, 2004). The Yakima school district has as of October 2003 14,528 students enrolled and of those students 55.7% are Hispanic making them the majority for the Yakima School District (OSPI, Washington State Report Card, 2004). Breaking this down even further Robertson Elementary of the Yakima School District has 574 students enrolled as of October 2003 and of those students 56.6% are Hispanic thus making them the majority at Robertson (OSPI, Washington State Report Card, 2004). With these changing and growing demographics the state and local education decision makers must help school districts provide effective, meaningful, and accessible education so that this fast growing group can be productive members of society (Thomas & Collier, 1997).

In Chapter 2 is a literature review that takes a look at several different studies that support literacy in the 1st language. We also take a look at the studies that support bilingual education in a Dual Language approach, specifically looking at science methodology and thematic units. Dual language offers development of literacy in the first language and once students discover how their first language can be used, they can easily learn to use the skills they learned in their first language to learn a second language. In other words the skills taught in the first language are transferred to learn a second language. Dual language is a program that exposes students to a bilingual/multicultural education. Students in this type of program receive equal exposure time to two languages. Studies such as Collier (1995) and Thomas & Collier (1997) found that if learning to read is a matter of making sense of print, and understanding what is written, it will be easier to learn to read in a language that is already understood. Krashen (1998) and Collier (1995) also support the idea that literacy related abilities are much easier to develop in the primary language and once they are developed, they can be applied to any other language the student acquires.

Dual Language has program characteristics that have strong support for students first language both academically and cognitively, for as many years as possible, especially in the content areas where language can be more complex (Thomas & Collier, 1997). Several different studies as in the ones mentioned above support literacy in the first language and bilingual education in the dual language approach. One of the most comprehensive studies on dual language programs was done by Wayne P. Thomas and Virginia P. Collier (1997) and found that children in well implemented dual language programs out perform students in traditional one language classes at the upper elementary

school level. Thomas and Collier found that Dual Language schools that had discovery learning, cooperative learning, thematic lessons, and incorporated literacy across the curriculum were effective in cognitive and academic learning. This project is an attempt to determine whom benefits, the key components of program effectiveness, and its impact on student learning in dual language programs.

Statement of the Problem

There are many bilingual models used in education today. The dual language model supports Krashen's (1996) statement that children take seven to ten years to acquire a second language, and tend to be more effective on student learning than other models such as Late-exit, Early-exit, Content ESL, and ESL Pullout. Dual Language addresses all the components of the "prism model" defined by Thomas and Collier (1997) that are needed for academic and cognitive language development. In a program where English learners receive enrichment bilingual education, like dual language, finish schooling with average scores that reach or exceed the 50th national percentile. Those receiving ESL pullout and then receive instruction in the English mainstream finish school with average scores between the 10th and 18th national percentiles, or don't even complete high school (Thomas & Collier, 1997). This creates an achievement gap.

With so many different teaching methods, especially in bilingual education there are achievement gaps that need to be closed. The No Child Left Behind Act (NCLB) focuses on determining which educational programs and practices have been proven effective through scientific research. NCLB is helping schools develop recommendations on what school boards can do to raise achievement levels among students who are not

meeting standards, primarily African Americans, Hispanic, American Indian students, students from low income families, and English language learners (wssda.org, 2004). Dual language has been proven through research to raise achievement levels and close the achievement gap (Thomas & Collier, 1997). With the impact of NCLB schools and teachers are quickly moving towards teaching methods and programs, like dual language that are scientifically based to raise student achievement, thus creating the need for more curriculum development that address dual language programs and research based teaching methods.

Purpose of the Project

The primary purpose of this project is to develop a month long integrated thematic unit for 2nd graders in a dual language program that address research findings in the area of effective student learning in dual language programs. Incorporation of science methodology, ESL strategies, and thematic teaching are also researched for effectiveness and addressed in the project. Dual Language and its effectiveness will also be compared to other bilingual programs. Dual language with appropriate implementation increases student achievement in learning a second language (Kirk, 2002).

Significance of the Problem

Several studies provide insight, strategies, and data that support dual language. Kirk (2002) states that in order for dual language to work there are essential qualities that need to be implemented. One quality is thematic teaching.

Many schools face difficulties with these qualities because they don't have the resources to fulfill these qualities and traditional approaches are still being used (Thomas & Collier, 1997). Krashen (1996) states that English as a Second Language (ESL) instruction/strategies is also an important component of any quality bilingual program. Another problem stated by researchers Montague and Zaragosa (1999) is that many universities in the United States if any at all do not offer training programs in this area or they teach the basics components and do not offer classes on teaching practices.

Schools face many difficulties with implementing and developing curriculum for dual language programs, above mentions just a few. The need for dual language curriculum development and implementation is derived from issues that schools face such as the U.S. demographic changes which demand schools to reexamine their practices. The federal court case of 1981 *Castaneda vs. Pickard* is another that demands equal educational opportunities for English language learners and provides guidelines that schools should use to select educational programs of theoretical value, and follow the long term progress of these students (Collier & Thomas, 1997).

Another need for curriculum development and implementation is the "gap" that has been created due to traditional second language programs that practice repetitive drills, and have students translate long passages. These types of approaches have been used for many years in the U.S., however Krashen (1982) study on language acquisition found that there is a difference between language acquisition and language learning. Krashen stated that language acquisition is natural and it is how we learn our home language. Some of the conditions that foster language acquisition is when teachers provide understandable language (comprehensible input) with approaches needed for

students to understand the message. Some of the approaches that add context to language are props, gestures, and pictures, which all support a child's acquisition and lead to production of language (Herrell & Jordan, 2004). More and more teachers are needing to change their teaching practices especially due to legislation's such as No Child Left Behind, which support schools in determining which educational programs and practices have been proven effective based on scientific research (wssda.org, 2004).

Dual language curriculum and implementation fosters closing the achievement gap, the theory behind language acquisition that once the first language has reached its threshold students can then use those skills learned in the first language and transfer the skills from the first language to learn a second language. Dual language also fosters No Child Left Behind, and the right that all children have the right to an accessible, meaningful, and effective learning environment (Collier & Thomas, 1997). As a result of the project it will provide students comprehensible input (materials that lead to student's understanding of content), increase verbal interaction, the strategies and grouping techniques will reduce anxiety, and provide students the opportunity for active involvement (Herrell & Jordan, 2004).

Limitations

The project has the following limitations:

- 1) The research was limited to data present in elementary schools only.
- 2) The research was limited to effectiveness with Spanish speaking children and not other languages or the use of dual language with other languages.

3) There was limited research against dual language. Mostly opinions.

Definition of Terms

For the purpose of this project, related terms are defined as follows:

- **Bilingual- knows two languages**
- **Content ESL-** “ Second language programs that base language instruction around themes, topics, or subject matter, rather than on the language system itself (Soltero, 2004).”
- **Early-Exit bilingual education-** “ A subtractive transitional bilingual education model that provides native language instruction for one to three years while students acquire sufficient English language proficiency to function in mainstream classes (Soltero, 2004).”
- **ELL- (English Language Learner)** “The term used to describe students who are acquiring English as a second language (Soltero, 2004).”
- **ESL- (English as a Second Language)** “The field of study that addresses theoretical and pedagogical application to the teaching and learning of English as a second language. It is an educational approach designed to provide specialized instruction in English to English language learners (Soltero, 2004).”
- **ESL Pull-out-** A child is taken out from the mainstream classroom and are provided focus assistance in English development (Soltero, 2004).

- L1- “The first language acquired by a child. Also known as mother tongue, home language, primary language, first language, or heritage language (Soltero, 2004).”
- L2- “The second language acquired by a child or adult after the native language. May sometimes be defined as the weaker language or the lesser-used language. It may be the individual’s native language, especially when the native language has been abandoned or underused (Soltero, 2004).”
- Late-Exit bilingual education- “ A subtractive transitional bilingual education model that offers native language instruction while second language learners acquire English for a longer period of time than early exit bilingual education, usually for more than three years. English language learners continue to develop their native language for a period of six to eight years even after they have acquired English (Soltero, 2004).”
- Monolingual- knows only one language

Organization of the Study

The project is organized into five chapters. The first chapter contains a brief introduction, problem statement, purpose of the study, significance of the study, limitations of the study, definitions of terms, and organization of the study. A review of related literature is provided in Chapter 2. Chapter 3 contains the procedures. Chapter 4 contains a science thematic unit on butterflies. The summary, conclusions, and recommendations are reported in Chapter 5.

CHAPTER 2

Educating ELL Students

With in recent years state, federal and local decision makers have been having to reexamine what schools are doing in the area of effective schooling for culturally and linguistically diverse schools. What has been learned from research has not been put into practice and students of language minority are not receiving the educational experiences that they should. Students just beginning to acquire English have been under served by schools, because local and state decision-makers have had little or no guidance on appropriate educational programs for these students. Therefore, instructional programs have been implemented based on professional intuition and their personal experience (Thomas & Collier, 1997).

Several issues have facilitated the need for redirection among educators when it comes to appropriate bilingual education. First, No Child Left Behind, which puts emphasis on determining which educational programs and practices have been proven through scientific research. This legislation supports researched based instructional programs and makes educators more accountable. Second, strong efforts are needed to close the achievement gap that has been created due to implementation of inappropriate bilingual program (wssda. org, 2004). Third, is United States demographic changes, schools must provide accessible, meaningful, and effective schooling for all students. It is necessary to provide them with appropriate education so that they can obtain good jobs and lead productive lives (Thomas & Collier, 1997). Finally, federal court cases like *Casteneda v. Packard* and *Lau v. Nichols* directs schools to take steps to help limited

English proficient students overcome language barriers and to ensure that they can participate meaningfully in educational programs (wssda. org, 2004). *Casteneda v. Packard* provides guidelines that schools should select educational programs of theoretical value for English learners, implement them well, and follow their long term progress so that equal educational opportunity is provided (Thomas & Collier, 1997).

With these issues pushing educators to change educational practices, educators need to ask themselves, “What does research say about best practices in the area of bilingual education?” When considering a bilingual program educators need to consider the research on language acquisition and language learning.

Thomas and Collier (1997) found that it takes four to seven years to acquire a second language. Dual language fosters this idea that it takes four to seven years to learn a language, whereas other bilingual models are set up for three years only. Students who are instructed in English only have a hard time reaching grade level expectations because native English speakers are developing cognitively and academically with every year of school and continue learning language acquisition in an English learning environment, when ELL’s are not (Thomas & Collier, 1997). Thus creating an achievement gap.

Thomas and Collier (1997) also developed from their research findings the “Prism Model” for language acquisition. The Prism Model has four major components sociocultural, language development, academic development, and cognitive development.

Sociocultural is the students’ environment in which a student experiences through everyday life within the past, present, and future. A student’s surrounding include home, school, community, and society, which all are central to a student’s acquisition of

language. For example, the instructional environment at school or in a classroom in particular can create social and emotional distance between groups. Some of the socialcultural processes at work that affect second language acquisition is self- esteem and anxiety. Achievement can be impacted if in the community there is prejudice, discrimination, subordination, or acculturation vs. assimilation. “These factors can strongly influence the student’s response to the new language, affecting the process positively only when the student is in a socioculturally supportive environment (Thomas & Collier, 1997, p.42).”

The second component of the model is language development. “This includes the acquisition of the oral and written systems of student’s first and second languages across all language domains, such as phonology, vocabulary, morphology, syntax, semantics, pragmatics, discourse, and paralinguistics (nonverbal and other extralinguistic features) (Thomas & Collier, 1997, p.43).” A student must develop high cognitive levels in their first language in both oral and written to gain academic and cognitive success.

Academic development is the third component of the model. Academic development includes all schoolwork in all domains. Academic development transfers from the first language to the second language. “Thus, it is most efficient to develop academic work through students’ first language, while teaching the second language during other periods of the school day through meaningful academic content (Thomas & Collier, 1997, p.43).” As the students goes through school each year the academic work becomes more cognitively demanding. Delaying academic development can lead to academic failure not only because each year is more cognitively demanding but students

can not afford to be pulled out during on grade level academic work to learn English (Thomas & Collier, 1997).

The fourth component is cognitive development. Cognitive development is natural and it occurs developmentally from birth and beyond. Infants begin to develop cognitively when they interact with those around them in the home language. It begins there and continues through schooling.

In language teaching, we simplified, structured, and sequenced language curricula during the 1970s, and when we added academic content into our language lessons in the 1980s, we watered down academics into cognitively simple tasks, often under the label of “basic skills.” We also too often neglect the crucial role of cognitive development in the first language (Thomas & Collier, 1997, p.43).

All of these components need to be taught at the same time because one depends on the development of the other. These components must be addressed equally through both first and second languages to assure academic success in the second language. Sociocultural processes can influence both negatively and positively on the students’ access to cognitive, academic and language development. Therefore schools need to provide a socialculturally supportive environment that allow all four components to grow in a child’s first and second language.

In an English only program the academic development is not provided for or not on grade level, the sociocultural piece is ignored, the cognitive development is not emphasized, and language development is in English only (Thomas & Collier, 1997).

Language acquisition and language learning are very different and many educators can misread what a student knows in their second language. Language learning is formal instruction and language acquisition is a natural, meaningful, and developmental way through social interaction with native speakers to acquire a language (Soltero, 2004). Many educators tend to think that if a student can speak the second language that they have the academic and cognitive piece of the language as well. Cummins (2000) defines for us the difference in length of time to learn conversational language known as basic interpersonal communicative skill (BICS) and academic language known as cognitive academic language proficiency (CALP). Cummins stated that BICS is acquired faster or easier because it's facilitated by contextual cues and personal interest. CALP requires high levels of cognitive involvement, is more abstract, and has fewer contextual cues.

Cummins (2000) developed the threshold hypothesis, which states that first language literacy transfers to a second language only when a learner has reached a high level of competency in the first language. Only when this native language competency is reached does the learner obtain cognitive development in both languages. This means that once a learner has developed an understanding of print concepts, alphabetic principle, text structures, use graphophonics, syntactic, and semantic cues to create meaning from text in their primary language, it is then transferred to their second language. Cummins found in his research that the transfer of skills from one language to the other is due to the common underlying proficiency (CUP) that all languages have.

CUP is the notion that cognition and language skills that are learned in the first language form the basis for subsequent learning in a second language. The

second language and the native language share a common foundation. This linguistic interdependence allows the transfer of ideas, concepts, knowledge, and skills from one language to another when the learner understands the second language (Soltero, 2004, p.162).

Even when writing systems are different what makes the transfer possible are the related literacy concepts like predicting, inferencing, and familiarity with text structures.

Furthermore Krashen (1998) defines comprehensible input as a key factor in language acquisition. Comprehensible input is language that a learner can understand with the aid of contextual clues such as gestures, body language, visuals, context, or prior knowledge. Comprehensible input is based on the idea that language communication made meaningful.

Dual language is an additive bilingual education which aims to maintain and develop students' native language, as well as develop students' second language. The primary goal of this program model is for students to obtain high levels of bilingualism and biliteracy by adding another language to the students linguistic and cognitive skills (Soltero, 2004). Cummins (2001) supports this idea through research and states, "the most powerful ways of incorporating students' language and culture into the curriculum are through dual language (two-way) or developmental (late-exit) bilingual programs that aim to promote bilingualism and biliteracy (p.214)."

Besides additive bilingual education there is also subtractive bilingual education. These program models aim to replace students' native language with a second language. The primary goal is monolingualism in the second language. This is accomplished by

subtracting the home language from the students' linguistic and cognitive skills. These types of programs include transitional and English immersion (Soltero, 2004). Research done on bilingual education like those of Krashen (1998), Cummins (2000), and Thomas and Collier (1997) don't support these types of programs based on findings of how we acquire language.

Dual language fosters many of the research findings on language acquisition and language learning, thus making dual language an effective and appropriate bilingual program. Dual language has been proven effective through research.

Bilingual Education Research Based Instructional Models

There are six bilingual education research based instructional models. The first is Two-Way bilingual enrichment, second is Late Exit with academic ESL, third is Early Exit with Content ESL, fourth is Early Exit with ESL Pull-Out, fifth is Content ESL, and finally ESL Pull-Out. According to Dr. Richard Gomez (2002) about eighty percent of all students are in a pullout type of program and very seldom does it work.

Late exit is a subtractive transitional bilingual education model that offers native language instruction while second language learners acquire English for a longer period of time than early exit bilingual education, usually for more than three years. English language learners continue to develop their native language for a period of six to eight years even after they have acquired English (Soltero, 2004).

Early exit is a subtractive transitional bilingual education model that provides native language instruction for one to three years while students acquire sufficient English language proficiency to function in mainstream classes (Soltero, 2004).

Content ESL is a model that relies on the classroom teacher who has been trained to teach the ELL child the entire curriculum while keeping the ELL child together with the rest of his/her ELL students at all times. The ESL trained teacher employs ESL techniques to ensure his/her ELL students learn the academic curriculum while they are in the process of becoming English proficient. All instruction is delivered in the target language, English (Ensuring academic success for ELL's, Yakima School District handbook, 2004).

ESL pull out is also a bilingual education model that is used. Students spend part of the day in a mainstream classroom and are "pulled out" for a portion of the day to receive instruction in English as a second language (Soltero, 2004).

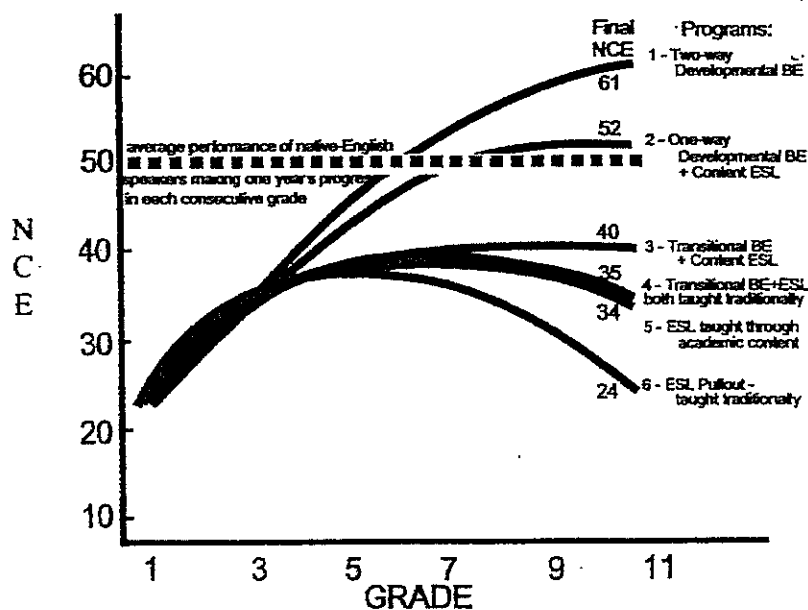
The research-based figure 1 below by Thomas and Collier (1997) shows the academic effectiveness of all six bilingual education models on standardized tests in English reading. The dotted line at the 50th percentile or Norm Curve Equivalents (NCE) is defined as at grade level, represented by native K-12 English speakers that have made 10 months gain in 10 months time across the years. In this figure you will see that in first grade students start out the same, which Dr. Gomez (2002) address as "guess work." By fourth grade you really start to see the achievement gap and by eleventh grade the achievement gap is even bigger thus making it harder to close this achievement gap. As children move through school, schoolwork gets more cognitively complex. All children make some gains, but the difference is children receiving instruction in L2 make a gain of 6-8 months. While native speakers gain 10 months in 10 months time, which is enough to maintain the average score at the 50th NCE (Norm Curve Equivalents) across the years, which is where teachers want all students to be. Thus, with the 2 months gain that native

speakers have over non-native speakers, with each passing year the achievement gap gets wider. In other words non-native speakers must make more progress with each year of school than native speakers to close the achievement gap (Thomas & Collier, 1997).

**PATTERNS OF K-12 ENGLISH LEARNERS'
LONG-TERM ACHIEVEMENT IN NCEs
ON STANDARDIZED TESTS IN ENGLISH READING
COMPARED ACROSS SIX PROGRAM MODELS**

(Results aggregated from a series of 4-8 year longitudinal studies
from well-implemented, mature programs in five school districts)

- Program 1: Two-way developmental bilingual education (BE)
- Program 2: One-way developmental BE, including ESL taught through academic content
- Program 3: Transitional BE, including ESL taught through academic content
- Program 4: Transitional BE, including ESL, both taught traditionally
- Program 5: ESL taught through academic content using current approaches
- Program 6: ESL pullout—taught traditionally



(Thomas & Collier, 1997)

The reason for this gap is because students taught in their first language are able to gain academic and cognitive achievement whereas a student emerged in English only is lost and is making limited if any academic/cognitive gains. A student who is in English only is too busy being lost and trying to figure out what is going on. In the Thomas and Collier study (1997) they found that ELL learners would need to make a fifteen months gain in each of several consecutive school years to ever close this achievement gap.

Thomas and Collier (1997) state, "if students don't reach a certain threshold in their first language, they may experience cognitive difficulties in the second language (p.41)."

Thomas and Collier (1997) also state "when schooling is provided in both L1 and L2 both languages are the vehicle for strong cognitive and academic development (p.41)."

In a study by Collier (1995) it was found that instruction in their second language with no schooling in their first language take seven to ten years to reach grade level of their native English-speaking peers. Students who had two to three years of first language schooling take five to seven years to reach grade level of their native English-speaking peers.

According to the figure (Thomas & Collier, 1997), and Gonzalez and Maez (as cited by Ramirez et al., 1991, Volumes II & I) students in late-exit instructional programs do better than students in early-exit and structured English programs. A Structured English program is a subtractive model of instruction in which second language learners are place in English classrooms with little or no first language support and minimal ESL assistance, usually in the form of pullout second language instruction (Soltero, 2004). Language minority students that are also provided with satisfactory and proportional amounts of instruction in their first language enhances their ability to improve their English language skills and their cognitive skills in content areas.

What is Dual Language?

Dual Language is a program that exposes students to a bilingual/multicultural education. Students in this type of program receive equal exposure time to two languages. Students receive opportunity of the core curriculum in their native language for half the day, and then they switch and receive the remainder of the core curriculum in their second language.

Students of each language group serve as models for the other, shifting from being the expert to the novice as they interact in negotiating the curriculum. By regarding language as a resource to be developed and integrating language minority and language majority students for most content instruction, an instructional environment is created to promote positive cross-cultural attitudes and enhanced self-esteem (Kirk, 2002, p. 2).

Essential qualities for a Dual Language Program

In today's society there is a growing number of immigrants, which has led researchers and educators to determine how we can best serve our English Language Learners. The state of Washington is a multilingual and multicultural state with one hundred eighty one languages, ninety languages spoken by fewer than ten, and eight languages spoken by one thousand plus students. In Washington the percentage of people that speak a specific language other than English is as follow: Spanish sixty two percent, Ukrainian five percent, Korean three percent, Somali one point five half percent, Russian eight percent, Vietnamese four percent, Cambodian two percent, and Tagalog one and one half percent (Gomez, 2002). When considering and implementing a bilingual program we also need to consider the demographics.

Language is not the only factor that affects learning, situations like first generation immigrants; high drug/crime area, single family homes; blue-collar, multiple languages; gang activity, high poverty; gangs; migrants; nineteen percent unemployed, and high student mobility; students without schooling can affect student learning (Gomez, 2002).

According to Lindholm (1990) the essential factors for a quality two-way bilingual immersion program include the following:

- 1) a minimum of four to six years of bilingual instruction;
- 2) a focus on the same core curriculum that students in other programs experience;
- 3) quality language arts in both languages;
- 4) use of target language for a minimum of fifty percent of the time to a maximum of ninety percent in the early years;
- 5) an additive bilingual environment for all students to learn a second language while developing their first language;
- 6) a balanced ratio of students who speak each language;
- 7) positive interdependence among students promoted by the use of strategies such as cooperative learning; and
- 8) characteristics of effective schools such as qualified personnel and parent-school collaboration (Kirk, 2002, p. 2).

Dual Language and Its Effectiveness on Learning Literacy Development

Many factors play an important role in determining what literacy instruction is appropriate for children. For example, the number of language groups in a population, the political and economic status of these language groups, and the history of the language groups.

The international reading association believes that literacy learning in a child's first language is easiest. When children are taught literacy in their first language it allows

for children to connect with familiar text instead of unfamiliar text. Literacy instruction in their first language helps children build on the strengths and skills they already have. The skills developed are transferred and applied to reading and writing in a second language. The end product or goal is to have a student become literate and proficient in two languages (International Reading Association, 2001).

According to Snow, Burns, & Griffin (1998) (as cited by The International Reading Association, 2001), "The accumulated wisdom of research in the field of bilingualism suggests that while initial literacy learning in a second language can be successful, it's riskier than starting with the child's home language, especially for those children affected by poverty, low levels of parental education or poor schooling (International Reading Association, 2001, p1)."

To take a look at the different factors that play a role in literacy instruction Gorman, White, Brooks, & English (1988) (as cited by The International Reading Association, 2001), took a look at the situation in England and Wales. In England there are one hundred and fifty languages however there are very few that speak each language and the languages that there is significant numbers of are too spread out to incorporate home language practices. In England each community is responsible for maintaining the home language. In Wales over eighty percent are monolingual English speakers however the Welsh language was first spoken before English existed. Welsh language education is available for the children. In England and Wales a series of national surveys was done in reading and writing in English on eleven and fifteen year old children between 1979 and 1988. The results in England were students learning in their first language scored higher than those learning in their second language, and no differences were noted in

Wales. The results of this survey indicate that education in the first language doesn't result in lower achievement in the national language that is different.

Stephen Krashen and Douglas Biber stated three principles based on research of successful programs for LEP students. Krashen and Biber (1998) stated the three principles are a) high quality subject matter teaching in the first language b) development of literacy in the first language, and c) comprehensible input in English.

So many times we argue, "Why bilingual education?" or "What bilingual programs are best for our children?" According to Krashen and Biber (1998)

ESL and sheltered subject matter teaching can certainly help limited English proficient children, full bilingual programs, programs that meet the three principles and that offer enrichment, are preferable. There are, in fact, six reasons-three for early first language education and three for advanced first language education-to prefer bilingual education: 1. The "traditional" rationale for bilingual education: It allows children to keep up in subject matter while acquiring English. 2. Developing literacy in the primary language facilitates the acquisition of English reading, and allows early development of the informational uses of literacy. 3. Learning subject matter through the first language provides knowledge that helps make subject matter study in English more comprehensible. 4. High levels of bilingualism can lead to practical, career-related advantages. 5. High levels of bilingualism can result in superior cognitive development. 6. Bilingual education and develop a healthy sense of biculturalism and avoid bicultural ambivalence (Krashen & Biber, 1998, pp 4&5).

In a study that supports instruction in the first language Thomas and Collier (1997) from their research findings developed what is called The Prism Model for Language Acquisition for School. The four major components are sociocultural, linguistic, academic, and cognitive processes. Each is interdependent and complex. Students need according to Collier (1995) to have all four components in order to be ready to learn in and transfer skills to their second language. Collier (1995) states, "It is crucial that educators provide a socioculturally supportive school environment that allows natural language, academic, and cognitive development to flourish (p.3)."

Benefits of Dual Language

The potential benefits of a two-way bilingual immersion program include: 1) non-native English speakers learn English and develop English skills necessary for academic success, particularly in the core content 2) by non-native speakers maintaining and developing their native language it expands our language competence, 3) native English speakers learn another language along with the academic core content curriculum, 4) students serve as native speakers for one another to help each other complete tasks, 5) students gain appreciation for one another's language and culture, and 6) learning another language boosts their self-esteem (Benchmark Study Update, 1997).

Successful Stories of Dual language

To better understand why dual language is successful we go back to Cummins research on language acquisition and language learning. Cummins (2000) research explains the difference in length of time required to learn basic interpersonal communicative skills (BICS) and cognitive academic language proficiency (CALP). Cummins explains that the language demands of each is different in the fact that BICS is

greatly facilitated by contextual cues like gestures, intonation, and situational context. BICS also is motivated by personal interests and is not cognitively demanding. On the other hand CALP requires high levels of cognitive use, is more abstract, and uses less contextual cues (Cummins, 2000). The understanding of BICS and CALP is very important for educators to understand because a student who has conversational skills can lead to a misunderstanding of what that child can do cognitively with the language.

Cummins (2001) developed what is called the “threshold hypothesis” which is the notion that first language literacy transfers to a second language only when a learner has reached a high level of competency in the first language. Only when this native language competency is reached does the learner obtain cognitive benefits from knowing the two languages. Cummins further explains that developing literacy in a second language does not involve starting over. Once a learner has developed an understanding of print concepts, the alphabetic principle, text structures, and how to use graphophonic, syntactic, and semantic cues to create meaning from text in their primary language, the learner transfers this knowledge to reading in a second language (Cummins, 2001).

Even when two languages are very different general literacy concepts such as inferencing, predicting, and text structures are easily transferred. Thus, meaning that the academic and linguistic skills developed in the first language transfer to the second language. Cummins further explains why this transfer between languages can happen according to the model, “Common Underlying Proficiency” (CUP) which states that cognition and language skills that are learned in the first language form a foundation for learning in a second language. Cummins (2001) states that there is an underlying cognitive and academic proficiency common across all languages regardless of their

unique characteristics. He found that transfer is more likely from minority to the majority language due to the greater exposure of literacy in the majority language and the social pressures to learn it (Cummins, 2001).

Cummins describes three important factors to bilingual development and language teaching, the first mentioned above “Common Underlying Proficiency.”

Second, the development of additive bilingual and biliteracy skills demonstrates no negative consequences for children’s academic, linguistic or intellectual development. In fact, the research shows benefits for bilingual children in metalinguistics and intelligence. Thirdly, is the ability to provide meaningful communication, which ties in with Krashen’s theory of comprehensible input in that language is acquired involuntarily and effortlessly only when it is comprehensible, which is facilitated by visual aids and context (Cummins, 2000). Dual language promotes bilingualism, biliteracy and supports the research findings on language acquisition and language learning. The following schools have found positive results from dual language.

Longfellow Elementary, a magnet school for Spanish and the fine arts in the Albuquerque Public Schools, has successfully implemented a two-way bilingual immersion concept for seven years (Armendariz & Armendariz, 2002). Longfellow Elementary has one-fourth monolingual Spanish speaking kindergarteners, another one-fourth are monolingual English speaking, and fifty percent are bilingual (Armendariz & Armendariz, 2002). Kindergarten and first grade have a 90/10, Spanish to English program instruction ratio. Spanish instruction by second grade begins to decrease by ten percent and eventually the curriculum is taught at a fifty/fifty ratio by fifth grade (Armendariz & Armendariz, 2002). Prior to implementing this model Longfellow

Elementary had a state-funded program that was forty-five minutes of Spanish instruction and an extra fifteen minutes of cultural awareness. Longfellow went through an evaluation for a year and a half because the area of improvement in the magnet focus was Spanish.

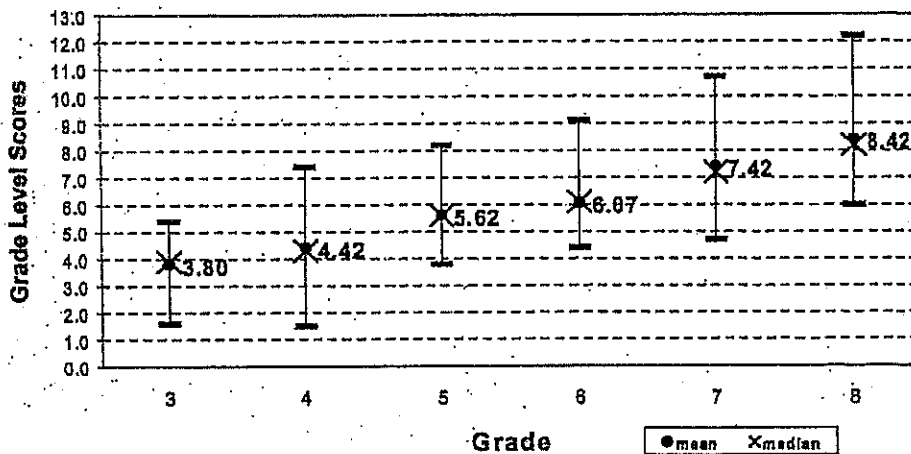
The principal of eight years at Longfellow decided to study the research and what it says about the development of a second language. With the influx of Spanish speaking students and teachers approaching the principal, because they didn't know how to reach these children, gave them more of a push to start the two-way program. Longfellow did this by slowly phasing out the forty-five minutes a day and phased in one grade at a time the two-way program. In order to implement this Longfellow also had to reach out to community and family members and share research on how the two-way was successful.

Switching to this model has produced high standardized test scores on average ranging in the 60th to the 85th percentiles on both the ITBS and La Prueba (Armendariz & Atmendariz, 2002). Since the two-way Longfellow's gifted program has increased to about 40 students, whereas before they were in danger of not qualifying and had only about 20 students. They are also seeing giftedness in children earlier than before and are qualifying as early as second grade whereas before giftedness was seen more in the upper grades. The two-way model has also developed multilingual and cultural awareness and comfort among parents, teacher, and the community.

Longfellow Elementary has a successful program because; "well-informed, caring, committed, and supportive parent group, and a faculty, community, and principal that were trying to do justice to the education of children (Armendariz & Armendariz, 2002, p. 9)."

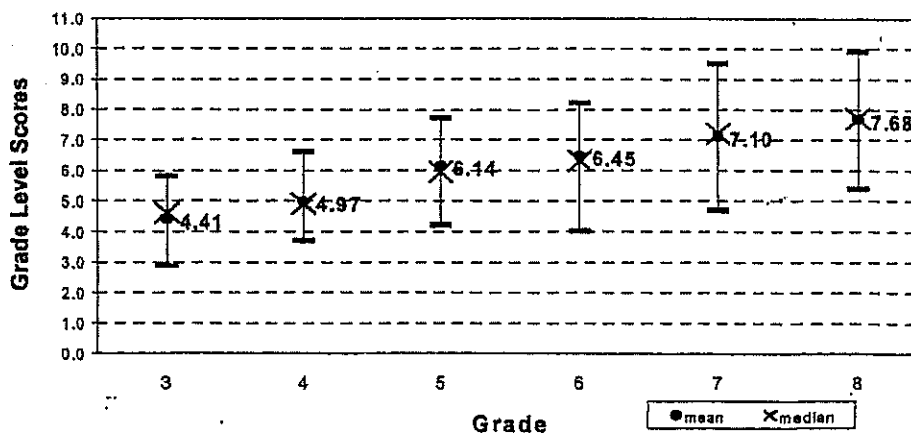
Another school, Inter-American Magnet School in Chicago, is also doing a dual language program, and has seen high levels of achievement in low-income LEP students. To see achievement of the two-way scores from the ITBS from grades 3-8 was examined. In an eighth grade class of forty-nine students, thirty-seven students had attended Inter-American for five years, twenty-four were low-income LEP, and two receiving special education (Kirk, 2002). Kirk (2002) presents two tables, table one shows ITBS reading scores, table two shows ITBS math scores (n varies from 17-24 for each grade level) both tables show the range, mean with numerical score, and median. These tables show continuous patterns of growth at grade level from third through eighth grade.

Table 1 ITBS Reading Scores



(Kirk, 2002)

Table 2 ITBS Math Scores



(Kirk, 2002)

To measure student achievement of state goals in social science and science the state of Illinois administers the ISAT (Illinois Standards Achievement Test). Science and social science are tested in grades four and seven. Table 3 presented by Kirk (2002) compares Inter-American students to the Chicago school district and also to the state of Illinois. The numbers in these tables represent the percentage of fourth and seventh grade students who met and exceeded the state goals on the ISAT in social science and science, no specific scores were given for each student or as a whole group. Kirk states that the Inter-American students had higher achievement levels when compared to the district and when compared to the state, students achieved at the same levels and in some cases exceeded students statewide (Kirk, 2002).

Table 3 ISAT in Social Science and Science

Subject		Social Science		Science	
Level	Grades	4	7	4	7
IAMS	1998	79	87	80	95
	1999	60	89	92	85
	2000	38	51	53	67
Chicago School District	1998	64	71	80	77
	1999	53	65	74	64
	2000	28	34	33	47
State of Illinois	1998	83	85	90	88
	1999	98	81	88	81
	2000	59	58	64	72

(Kirk, 2002)

Inter-American also administered the reading and writing sub-tests of La Prueba (a Spanish test). Kirk (2002) shows table 4 with Spanish reading scores and table 5 with Spanish writing scores, both showing achievement scores in National Percentile rank of average NCEs for grades 3-8. These tables show that limited English proficient students, bilingual students, and monolingual English students are developing a functional level of reading and writing skills in Spanish. It is obvious here for Inter-American that two-way is achieving its goals.

Table 4 Spanish Reading Scores

	Grade					
	3	4	5	6	7	8
1998	57	48	53	64	63	61
1999	51	61	54	70	64	68
2000	50	53	60	72	65	58

(Kirk, 2002)

Table 5 Spanish Writing Scores

	Grade					
	3	4	5	6	7	8
1998	69	67	67	67	80	68
1999	61	72	57	43	82	83
2000	56	67	78	56	69	78

(Kirk, 2002)

So many times as educators we forget that students outside of school are in a society that does not use English and when school don't foster the learning of their first language it impacts their life in the means of communication with family, friends, and others in their environment. Maintaining the first language while learning English impedes learning among Limited English Proficiency children (Gonzalez & Maez, 1995).

Lindholm & Aclan (1991) (as cited by Gonzalez & Maez, 1995) examined reading and math achievement in both English and Spanish. The results showed that high proficiency bilinguals outscored medium proficiency bilinguals, who in turn performed better than low proficiency bilinguals. Seda & Abramson (1990) (as cited by Gonzalez & Maez, 1995) also examined writing in students learning English as a Second Language and found that native English speakers and ESL students had similar stages of writing development.

In a study Garcia (1993) (as cited by Gonzalez & Maez, 1995) found that bilingual education in the content area of reading, English, science, mathematics, and social studies the academic success was higher and the data also showed increased self-esteem, aspirations to professional careers, enhanced academic strategies, and improved perceptions about schooling.

In another study by Collier (1992) it concludes that students receiving equal amount of education in their first and second languages the result is higher academic success in their second language as compared to groups of students schooled monolingual in the second language. Studies have also shown students in bilingual education programs for more than three years perform higher and begin to close the gap, because programs that don't provide first language support take along time to catch up with their peers. "Programs that nurture the first language and take the time to establish a firm cognitive foundation may take longer, but the end result is well worth the effort (Gonzalez & Maez, 1995, p. 6)"

Effective Teaching Strategies for ESL children in Science

A recent study done by Tomas and Collier (1997) found that dual language provides academic success especially in content areas where language can be difficult. For the purpose of this paper we take into consideration Science. Since 1986 there has been an increasing number of Limited English Proficient children in the public schools (Buck, 2000). Teachers need strategies to help accommodate these children in all subject areas, and surprisingly enough many of those strategies are tied to science methodology. In the article, "Teaching Science to English as a Second Language Learners" by Gayle A. Buck recommends that science teaching should be an environment where students are able to question, use authentic materials, hands on approaches, and visual representation. The strategies that she recommends are using the chalkboard more often to illustrate oral discussions, giving step by step instructions, opportunities to observe and express their observations either in words, orally, or illustrations. Some other strategies are word walls for unfamiliar words that children can look back at, and using different words to make unclear statements more clear. Also summarizing what has been learned often, cooperative learning groups with a balance of English and non English speakers, and using different methods of instruction to deliver a lesson (e.g. picture books, hands on activities, demonstrations, group discussions) are all strategies that can be used to achieve student learning. Parent involvement is also very helpful. When teaching science teachers should also help students make connections to real life (Buck, 2000). Another important strategy is peer instruction because through peer instruction children can often times explain things to each other where the child can understand (Buck, 2000).

Buck goes on to explain four additional learning strategies that can be used when teaching science. For example the first is, using prior knowledge, which is using what they already know and building from that. Second, is setting aside time for children to generate questions so that they can explore and fill in those gaps to understand. Third, having the children summarize what they have learned which allows for revisiting of understandings. Last, scaffolding, which provides examples and demonstrations of activities. These strategies can help ESL students succeed in the classroom (Buck, 2000).

In another article by Laurie E. Hansen entitled, "Science in any Language" gives four strategies from Guided Language Acquisition Design (GLAD) that can be used with ESL students that have many of the same ideas from Buck's article. The first one is pictorial input, which is a strategy used for teaching academic content and vocabulary. This strategy provides visual representation of concepts and vocabulary that a teacher wants students to learn. The second is picture file cards. Here the teacher provides pictures of what is being taught to cooperative learning groups and are used as "talking prompts" which improves both academic English and conversational skills. Again oral discussion and cooperative learning groups are being emphasized. Third, poster boards, which are great visuals in the classroom, help ESL children in the fact that they have something concrete to refer to when concepts may be abstract. Last, ear to ear reading which helps with the reading of textbooks that may be difficult helps reduce anxiety. Ear to ear reading is when children read in each other's ears instead of out loud. Many times second language learners are embarrassed to use the second language in front of others for fear that they will be wrong or laughed at (Hansen, 2003). These strategies are

effective and can be implemented in any science unit most importantly they all lend themselves toward what Krashen calls the “affective filter” (Hansen, 2003).

Recent studies with similar strategies have shown to be positive. In one study twenty elementary teachers went through a professional development that provides field experiences, investigative activities, problem solving activities, and cooperative learning opportunities that can be used in a K-8 science instruction. These experiences that were provided to these teachers came from a constructivist learning theory. The goal of this study was to provide teachers with experiences of inquiry, reflection, sharing of real life problems, and use of the constructivist model in science so that they would better implement those same strategies in their own classroom. This study modeled the teaching and learning that needs to happen in the classroom, which is hands on science that provides opportunities for questioning and reflection (Desjean-Perrotta & Buehler, 2000).

This study found that teachers effectively transferred their own experiences as learners into their own classroom and provided their own students with hands on activities, more learner centered, and experiments that provided problem solving and the use of manipulatives (Desjean-Perrotta & Buehler, 2000). When teachers transferred their learning of these strategies into their classroom one teacher wrote, “I have implemented more inquiry and hands on learning in my science class. I see a difference in the science skills in my students. I see more observing, comparing, measuring, inferring, and predicting. We always included process skills, but now there is much more use of them” (Desjean-Perrotta & Buehler, 2000). This comment summarized the way

most of the participants felt. This study concluded success for teachers and their students with more effective teaching strategies to use in science.

In another similar study twenty teachers participated in an in-service that provided them with effective strategies for teaching science. Teachers collaboratively developed lessons that were hands on, discovery centered learning, allowed for problem solving, and were real life contexts and provided active learning. Teachers were able to use the lessons with their own classrooms between in-services. The lessons also allowed and provided students to use prior knowledge to construct new knowledge, mapping, cooperative learning groups, and open and guided questioning. The results of this study showed attitude improvement and enhanced student interest and learning (Arambula-Greenfield & Feldman, 1997).

Faculty from two particular schools are currently using these effective strategies. One is elementary teachers from Montgomery County Public Schools with the help of a grant have replaced traditional textbooks with highly experiential science that encourage students to investigate/explore, think creatively, and problem solve. Students are excited and teachers report that children if they could, would do science all the time. Until this grant Montgomery had difficulty obtaining hands on materials needed for effective science learning and there was an increased demand for more science instruction and promoting more interest among teachers and students. Montgomery felt that science instruction needed to provide the ability for students to ask questions, collect data, make sense of data and communicate findings and conclusions. In the end their revised curriculum was in line with the "Benchmarks for Science literacy" published by the American Association for the Advancement of Science. Some of the major differences

with this new curriculum is that it is inquiry based, the teacher facilitates and encourages students to observe, collect, record, compare data, and predict outcomes. This new curriculum also allows students to use their existing knowledge and use problem solving skills to gain deeper understanding of scientific concepts. This real life and experiential approach, which is effective for all children to learn especially ESL children benefit because of it's hands on and openendedness instruction (The Bullentin, 1997).

The second example is Rita DeBrito a fifth grade dual language teacher in an urban elementary school located in New York City. She also practices very similar strategies as the ones mentioned in the studies above and has found success in both teaching it and her students learning scientific concepts. DeBrito felt that success has come from the simple fact the students bring about their own curiosity in order to solve problems based on learning experiences and students are able to construct their own learning which results in greater meaning (NCELA, Teaching Science in a Dual Language Classroom).

Many of the strategies mentioned above reflect those of a constructivist approach as read in Yager's (1991) article. According to Yager the goal in science is to understand, synthesize, eventually be able to apply it, and use the information in new situations. Yager stated that we use language and our personal experiences to deal with our environment, to help us make sense of our world, and to communicate how we have constructed meaning. Yager mentioned in the article that researchers at the National Center for Improving Science Education have proposed a teaching model that uses the constructivist approach. The components of the model are group learning, invitation, exploration, proposing explanations and solutions, and taking action.

Children learn about scientific principles through discovery and investigation and primary educators set the stage for this by preparing an environment in which children can be stimulated, light there sense of curiosity that provide the ability to question. At the primary level, questioning and experiential learning lay a foundation for later science concepts and essential understandings (Meador, 2003).

Thematic Units

Dual language has a focus on assisting students learn the content area subjects and recent studies have found that students in a dual language program are one year above their peers in the content area subjects (Golden, 1996). Minicucci (1995) found the use of ten characteristics that gave academic support to LEP students. The use of thematic units to integrate the subjects was one of the ten. Haas (2000) stated, "Foreign language instruction for children can be enriched when teachers use thematic units that focus on content area information, engage students in activities in which they must think critically, and provide opportunities for students to use the target language in meaningful contexts and in new and complex ways."

Thematic units provide opportunities for students to be actively involved where they can negotiate meaning, practice language, and communicate with their environment, which provides meaningful learning (Haas, 2000). Haas's ideas are reflected upon the National Standards in Foreign Language Education Project (1996).

Garcia (1991) in his review of research on effective educational practices for linguistically and culturally diverse students, which also supports Minicucci (1995) findings, found seven characteristics. One of the seven effective educational practices

was that instruction of basic skills and academic content was consistently organized around thematic units.

In a discussion of research findings of three sites, Chicago, El Paso, and Washington D.C., Barrera & Jimenez (no date) found that teachers consistently mentioned the use of thematic units as a way of being able to achieve integration within the language arts and across the curriculum. Thematic units helped Latino children advance in literacy learning, which reflects effective practices that have been research as the ones mention above. In southwest Alaska, Aleknagik school is currently implementing a thematic approach, which has found to be both positive for the teacher and students. Since Aleknagik has adopted this approach, children are using reading, writing, and study skills in all areas and children are motivated to learn material that is relevant to their lives, because school is more like real life. This approach has provided intellectual growth based on assessments and observations from the teachers in Aleknagik (Peters, Schubeck, & Hopkins, 1995).

Thematic units provide the whole picture of a theme. Through theme's children learn the basic subjects based on the theme and the skills they learn from these themes eventually help them to learn why and how these skills are meaningful (Peters, Schubeck, & Hopkins, 1995).

To conclude it is obvious that many studies show education in the students first language provides great academic and cognitive success in not only reading but also other content areas.

According to (Pena, 1998) Aztec School District realizes that the existing monolingual program is not serving their Mexican students well because so many of

them are at risk. Postponing teaching content until their proficient in English place students at risk.

Studies also show that not only the use of dual language, a bilingual education model but the use of sheltered instruction strategies, thematic teaching, and science methodology can enhance students learning. All are connected and go hand in hand in that it was found that they all incorporate similar teaching strategies and methods. Hands on, cooperative learning groups, visuals, contextual cues, using prior knowledge to build on children's understandings, and using real life situations so that children can make a connection from what they are learning in the classroom to what is in our world are a few of the teaching strategies and methods that were found to be similar.

Dual language provides the opportunity of literacy instruction in a child's first language and it aims for cultururation and not assimilation. The goals of a dual language program are bilingualism, biliteracy, and academic achievement (Torres-Guzman, 2002). Using dual language and incorporating sheltered instruction strategies, thematic teaching, and science methodology provides academic and cognitive success as well.

CHAPTER 3

Procedures of the Project

Introduction

The purpose of this project was to create an integrated thematic unit in science on butterflies for second graders in a dual language program. According to Kirk (2002) research, he states the essential qualities a dual language program needs to be effective and those have been incorporated in the project. Those include language arts in both languages, target language is used for fifty percent of the time, an additive bilingual environment, and cooperative learning groups. In this project the essential qualities along with science methodology, thematic teaching, and sheltered instruction strategies are all incorporated.

Procedures

In this project the goal was to incorporate the essential qualities for a dual language program along with thematic teaching, sheltered instruction strategies and science methodology during a butterfly unit. I have been teaching for five years as a migrant/bilingual coordinator, thus making me the expert in my building in the area of ESL students, so with this I knew I needed some professional development in this area. My degree was not in ESL and I have learned on the job and have attended many training's and since then have taken college courses to become more knowledgeable in this area. I have read research like the Collier study that supports dual language and have found that it is the most effective model for academic success. In working with children of a second language I realized I needed to learn all I could in working with these

children, because I knew that if I didn't I would not be able to benefit these students in any way. Through working with these students, trainings and college courses I developed an interest and decided to create a thematic unit on butterflies that could be used in a dual language program for my Master's Project.

The author conducted research from educational resources like Educational Resources Information Center (ERIC), pro-quest, National Clearing House For Bilingual Education (NCBE), National Clearing for Research on Cultural Diversity and Second Language Learning (NCELA), and Center for Applied Linguistics (CAL) to gather information to complete a review of literature that would support the project. Books, journals, and magazines from the educational resources mentioned above were all used to gather information. The author also used the books, "Dual Language Teaching and Learning in Two Languages" by Sonia White Soltero and "The Power of Two Languages" by Josefina Villamil Tinajero and Alma Flor Ada.

The author has taken college courses like Sheltering I, Sheltering II, and Reading English as a Second Language and also had the opportunity to attend an in-service on Sheltered English that was given by the Northwest Regional Educational Laboratory Equity Center. Lastly the author has had an opportunity for five years to work with ESL children. All these resources support dual language programs with the use of sheltered instruction and thematic teaching.

After completing a review of literature the author found various resources from journals, books, magazines, and web-sites. From these resources it was obvious that dual language programs along with thematic teaching, sheltered instruction, and incorporating science methodology are supportive to the academic success of second language learners.

With these resources the author decided to write activities with lessons in science on butterflies that can be used in a dual language program that incorporates thematic teaching, science methodology, and sheltered instruction.

The author created a thematic unit on butterflies for second graders that can be used in a dual language program that incorporates science methodology, thematic teaching, and sheltered instruction. This thematic unit provides lesson plans that included EALR's, objectives of the lesson, objectives for ESL students, the materials needed, anticipatory set, procedures and an assessment piece. This thematic unit also provides all learners including second language learners with comprehensible input, increased interaction, contextualized language, reduced anxiety, and active involvement. Chapter four, the project, contains the thematic unit in science on butterflies that can be used in a dual language program for second graders.

CHAPTER 4

Project

Introduction

A thematic unit in science on butterflies is presented in chapter 4 that can be used in a dual language program. It was developed for second grade teachers to use in their classroom.

In the setting of the classroom there is diversity and not all children learn the same and as teachers we need to meet the needs of all learners. This thematic unit provides not only second language learners with opportunity to gain academic success in the content area but also benefits all types of learners. This helps teachers meet the needs of all students and allows children to gain meaningful connections in the content area. As teachers many times we assume because a child can speak a language that they have the cognitive part of the language which is needed in order to succeed academically, however the language they may have is only the language they need in order to survive in our society.

After an introductory letter to the teachers, lessons are organized that together develop a thematic unit to be used in second grade in a dual language program that also provide strong sheltered instruction strategies and science methodology.

Developments that Supports this Unit

Thematic Units

Minicucci (1995) found the use of ten characteristics that gave academic support to LEP students. The use of thematic units to integrate the subjects was one of the ten.

Haas (2000) stated, "Foreign language

instruction for children can be enriched when teachers use thematic units that focus on content area information, engage students in activities in which they must think critically, and provide opportunities for students to use the target language in meaningful contexts and in new and complex ways.”

Thematic units provide opportunities for students to be actively involved where they can negotiate meaning, practice language, and communicate with their environment, which provides meaningful learning (Haas, 2000). Haas’s ideas are reflected upon the National Standards in Foreign Language Education Project (1996).

Garcia (1991) in his review of research on effective educational practices for linguistically and culturally diverse students, which also supports Minicucci (1995) findings, found seven characteristics. One of the seven effective educational practices was that instruction of basic skills and academic content was consistently organized around thematic units.

In a discussion of research findings of three sites, Chicago, El Paso, and Washington D.C., Barrera & Jimenez (no date) found that teachers consistently mentioned the use of thematic units as a way of being able to achieve integration within the language arts and across the curriculum. Thematic units helped Latino children advance in literacy learning, which reflects effective practices that have been research as the ones mention above. In southwest Alaska, Aleknagik school is currently implementing a thematic approach, which has found to be both positive for the teacher and students. Since Aleknagik has adopted this approach, children are using reading, writing, and study skills in all areas and children are motivated to learn material that is relevant to their lives, because school is more like real life. This approach has provided

intellectual growth based on assessments and observations from the teachers in Aleknagik (Peters, Schubeck, & Hopkins, 1995).

Thematic units provide the whole picture of a theme. Through theme's children learn the basic subjects based on the theme and the skills they learn from these themes eventually help them to learn why and how these skills are meaningful (Peters, Schubeck, & Hopkins, 1995).

Second Language Development

Thomas and Collier (1997) found that it takes four to seven years to acquire a second language. Dual language fosters this idea that it takes four to seven years to learn a language, whereas other bilingual models are set up for three years only (Thomas & Collier, 1997).

Thomas and Collier (1997) also developed from their research findings the "Prism Model" for language acquisition. The Prism Model has four major components sociocultural, language development, academic development, and cognitive development.

Sociocultural is the students' environment in which a student experiences through everyday life within the past, present, and future. A student's surrounding include home, school, community, and society, which all are central to a student's acquisition of language. For example, the instructional environment at school or in a classroom in particular can create social and emotional distance between groups. Some of the socialcultural processes at work that affect second language acquisition is self-esteem and anxiety. Achievement can be impacted if in the community there is prejudice, discrimination, subordination, or acculturation vs. assimilation. "These factors can strongly influence the student's response to the new language, affecting the process

positively only when the student is in a socioculturally supportive environment (Thomas & Collier, 1997, p.42).”

The second component of the model is language development. “This includes the acquisition of the oral and written systems of student’s first and second languages across all language domains, such as phonology, vocabulary, morphology, syntax, semantics, pragmatics, discourse, and paralinguistics (nonverbal and other extralinguistic features) (Thomas & Collier, 1997, p.43).” A student must develop high cognitive levels in their first language in both oral and written to gain academic and cognitive success.

Academic development is the third component of the model. Academic development includes all schoolwork in all domains. Academic development transfers from the first language to the second language. “Thus, it is most efficient to develop academic work through students’ first language, while teaching the second language during other periods of the school day through meaningful academic content (Thomas & Collier, 1997, p.43).” As the students goes through school each year the academic work becomes more cognitively demanding. Delaying academic development can lead to academic failure not only because each year is more cognitively demanding but students can not afford to be pulled out during on grade level academic work to learn English (Thomas & Collier, 1997).

The fourth component is cognitive development. Cognitive development is natural and it occurs developmentally from birth and beyond. Infants begin to develop cognitively when they interact with those around them in the home language. It begins there and continues through schooling.

In language teaching, we simplified, structured, and sequenced language curricula during the 1970s, and when we added academic content into our language lessons in the 1980s, we watered down academics into cognitively simple tasks, often under the label of “basic skills.” We also too often neglect the crucial role of cognitive development in the first language (Thomas & Collier, 1997, p.43).

All of these components need to be taught at the same time because one depends on the development of the other. These components must be addressed equally through both first and second languages to assure academic success in the second language. Sociocultural processes can influence both negatively and positively on the students’ access to cognitive, academic and language development. Therefore schools need to provide a socialculturally supportive environment that allow all four components to grow in a child’s first and second language.

Language acquisition and language learning are very different and many educators can misread what a student knows in their second language. Language learning is formal instruction and language acquisition is a natural, meaningful, and developmental way through social interaction with native speakers to acquire a language (Soltero, 2004). Cummins (2000) defines for us the difference in length of time to learn conversational language known as basic interpersonal communicative skill (BICS) and academic language known as cognitive academic language proficiency (CALP). Cummins stated that BICS is acquired faster or easier because it’s facilitated by contextual cues and personal interest. CALP requires high levels of cognitive involvement, is more abstract, and has fewer contextual cues.

Cummins (2000) developed the threshold hypothesis, which states that first language literacy transfers to a second language only when a learner has reached a high level of competency in the first language. Only when this native language competency is reached does the learner obtain cognitive development in both languages. This means that once a learner has developed an understanding of print concepts, alphabetic principle, text structures, use graphophonics, syntactic, and semantic cues to create meaning from text in their primary language, it is then transferred to their second language. Cummins found in his research that the transfer of skills from one language to the other is due to the common underlying proficiency (CUP) that all languages have.

CUP is the notion that cognition and language skills that are learned in the first language form the basis for subsequent learning in a second language. The second language and the native language share a common foundation. This linguistic interdependence allows the transfer of ideas, concepts, knowledge, and skills from one language to another when the learner understands the second language (Soltero, 2004, p.162).

Even when writing systems are different what makes the transfer possible are the related literacy concepts like predicting, inferencing, and familiarity with text structures.

Furthermore Krashen (1998) defines comprehensible input as a key factor in language acquisition. Comprehensible input is language that a learner can understand with the aid of contextual clues such as gestures, body language, visuals, context, or prior knowledge. Comprehensible input is based on the idea that language communication made meaningful.

Dual language is an additive bilingual education which aims to maintain and develop students' native language, as well as develop students' second-language (Soltero, 2004).

Dual language fosters many of the research findings on language acquisition and language learning, thus making dual language an effective and appropriate bilingual program. Dual language has been proven effective through research.

Sheltering Strategies

In order to enhance student learning teacher's need to use sheltering strategies that are developed around five ideas. Teachers need to first ensure that students are given comprehensible input for example, materials that are presented in a manner that lead to the student's understanding of the content. Visuals, manipulatives, and scaffolding in first language are some examples. Second, teachers' need to provide opportunities to increase verbal interaction in classroom activities. Some examples are communication games, language experience activities, learning centers, leveled questions, partner work, peer tutoring, and story reenactment. Third, teachers need to provide instruction that contextualizes language as much as possible. Guided reading, advanced organizers, modeled talk, vocabulary role play, and word walks work well. Fourth, teachers need to provide instruction that reduces the anxiety of students. Cooperative learning, learning centers, and predictable routines and signals are some examples. Last, teacher needs to provide activities that offer opportunities for active involvement of the students. Some examples are collaborative reading, interactive writing, shared reading and sorting activities (Herrell & Jordan, 2004).

Science Methods

In the article, "Teaching Science to English as a Second Language Learners" by Gayle A. Buck recommends that science teaching should be an environment where students are able to question, use authentic materials, hands on approaches, and visual representation. The strategies that she recommends are using the chalkboard more often to illustrate oral discussions, giving step by step instructions, opportunities to observe and express their observations either in words, orally, or illustrations. Some other strategies are word walls for unfamiliar words that children can look back at, and using different words to make unclear statements more clear. Also summarizing what has been learned often, cooperative learning groups with a balance of English and non English speakers, and using different methods of instruction to deliver a lesson (e.g. picture books, hands on activities, demonstrations, group discussions) are all strategies that can be used to achieve student learning. Parent involvement is also very helpful. When teaching science teachers should also help students make connections to real life (Buck, 2000). Another important strategy is peer instruction because through peer instruction children can often times explain things to each other where the child can understand (Buck, 2000).

Buck goes on to explain four additional learning strategies that can be used when teaching science. For example the first is, using prior knowledge, which is using what they already know and building from that. Second, is setting aside time for children to generate questions so that they can explore and fill in those gaps to understand. Third, having the children summarize what they have learned which allows for revisiting of understandings. Last, scaffolding, which provides examples and demonstrations of activities. These strategies can help ESL students succeed in the classroom (Buck, 2000).

In another article by Laurie E. Hansen entitled, "Science in any Language" gives four strategies from Guided Language Acquisition Design (GLAD) that can be used with ESL students that have many of the same ideas from Buck's article. The first one is pictorial input, which is a strategy used for teaching academic content and vocabulary. This strategy provides visual representation of concepts and vocabulary that a teacher wants students to learn. The second is picture file cards. Here the teachers provides pictures of what is being taught to cooperative learning groups and are used as "talking prompts" which improves both academic English and conversational skills. Again oral discussion and cooperative learning groups are being emphasized. Third, poster boards, which are great visuals in the classroom, help ESL children in the fact that they have something concrete to refer to when concepts may be abstract. Last, ear to ear reading which helps with the reading of textbooks that may be difficult helps reduce anxiety. Ear to ear reading is when children read in each other's ears instead of out loud. Many times second language learners are embarrassed to use the second language in front of others for fear that they will be wrong or laughed at (Hansen, 2003).

Recent studies with similar strategies have shown to be positive. In one study twenty elementary teachers went through a professional development that provides field experiences, investigative activities, problem solving activities, and cooperative learning opportunities that can be used in a K-8 science instruction.

This study found that teachers effectively transferred their own experiences as learners into their own classroom and provided their own students with hands on activities, more learner centered, and experiments that provided problem solving and the

use of manipulatives (Desjean-Perrotta & Buehler, 2000). This study concluded success for teachers and their students with more effective teaching strategies to use in science.

In another similar study twenty teachers participated in an in-service that provided them with effective strategies for teaching science. Teachers collaboratively developed lessons that were hands on, discovery centered learning, allowed for problem solving, and were real life contexts and provided active learning. Teachers were able to use the lessons with their own classrooms between in-services. The lessons also allowed and provided students to use prior knowledge to construct new knowledge, mapping, cooperative learning groups, and open and guided questioning. The results of this study show attitude improvement and enhanced student interest and learning (Arambula-Greenfield & Feldman, 1997).

Faculty from two particular schools are currently using these effective strategies. This real life and experiential approach, which is effective for all children to learn especially ESL children benefit because of it's hands on and openendness instruction (The Bullentin, 1997).

According to Yager the goal in science is to understand, synthesize, eventually be able to apply it, and use the information in new situations. Yager stated that we use language and our personal experiences to deal with our environment, to help us make sense of our world, and to communicate how we have constructed meaning. Yager mentioned in the article that researchers at the National Center for Improving Science Education have proposed a teaching model that uses the constructivist approach. The components of the model are group learning, invitation, exploration, proposing explanations and solutions, and taking action.

Children learn about scientific principles through discovery and investigation and primary educators set the stage for this by preparing an environment in which children can be stimulated, light there sense of curiosity that provide the ability to question. At the primary level, questioning and experiential learning lay a foundation for later science concepts and essential understandings (Meador, 2003).

A Thematic Unit
For Second Graders
In a Dual Language Program
Science Unit: Butterflies

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Introduction to Teachers

This project is a thematic unit, which consists of lesson plans and activities in science on butterflies that can be used for a dual language program for second graders. Dual language means that half of the curriculum is taught in Spanish and the other half in English. For this reason half of the lessons are in Spanish, and all of the activity sheets, and all of the transparencies are both in English and Spanish. This thematic unit can be use in its entirety or it can be used to enhance a curriculum. The teacher should review all contents of this project at the beginning of the year and should begin planning in January so that you have all materials ready by the time April or May comes around. Whether materials are brought in by parents or some materials have to be ordered you want to allow enough time for those materials to come in. This thematic unit also takes preparation in that you may want to line up parent volunteers so that they will be ready to go when you start the unit. Another important piece is you will want to make sure you have the support from parents, community, principal, and administration because it may get costly when it comes time to purchase the caterpillars and the materials needed for this unit. If you let parents know ahead of time of some of the supplies you will need for this unit, parents can then donate some of those supplies.

This unit should take place in the spring (April/May). At the end of this unit the author has included children's literature for a classroom library, helpful web-sites to enhance the unit, teacher books or guides, and science supply houses where teachers can purchase caterpillars and other supplies for art, manipulative items, and activity books on butterflies. At the end of this unit you will also find the transparencies and master

transparencies needed for each lesson with further detailed explanations on the back of each master transparency, explaining what the transparency is showing. Black line masters of the activity sheets needed for each lesson and vocabulary words for a word wall in a classroom are also at the end of this unit. Along with the word wall teachers should display in English and Spanish a caterpillar with labeled body parts and a butterfly with labeled body parts for easy access to all students. Teachers can also provide pictures with their word wall.

A thematic unit has been developed for second graders in a dual language program in science on butterflies to introduce the concept of life cycles by using one organism. After researching the benefits of dual language and thematic teaching with the incorporation of science methodology, and finding many appropriate ideas, I began to develop my own thematic unit based on the science unit of butterflies for second grade students. Each lesson contains EALR's in science, reading, writing, and communication. Each lesson also contains content objectives, language objectives, sheltering strategies, materials needed, anticipatory set, procedure and an assessment.

These lessons are organized in order to be taught, however through the resources provided you may want to enhance different lessons depending on the needs of your classroom. The first eight lessons focus on the caterpillar and chrysalis stages. They draw a caterpillar and learn about its' body parts. They also learn about caterpillars' basic needs for air, food, water, and shelter. In this thematic unit student enhance skills of observing and recording where they observe a caterpillar crawl, hang upside down, spin silk, eat (eliminate waste frass)), rest, and shed skin. Students also observe transformation into a chrysalis and draw the chrysalis and predict what is happening.

The last lessons, lessons nine through twelve focus on the adult butterfly. Students identify butterfly body parts and learn what they are used for and how they function. Students get to feed the butterfly and observe how butterflies eat with their mouth (proboscis) in action. Students also learn that a butterfly is an insect. Students then after several days get to release the butterflies and understand how butterflies are part of the natural world. Throughout the unit students also observe and collect data and enhance their understanding of life cycles and can relate to other living things what they learned about butterflies.

This is not the only way to teach a thematic unit on butterflies because there are many possibilities. It is my hope that this will be a good start for most teachers who are new to teaching thematically and in a dual language program, and then you can expand from there.

Unit Purpose

In this thematic unit students will develop an interest in studying insects and appreciate the needs of living things. Students will be able to understand why insects are important and that butterflies (insects) have a place in our world. Students will also be able to understand why butterflies (insects) are needed in our world. This unit also introduces children to the concept of life cycles by using one organism as an example. Students throughout this unit also learn observational and recording skills, and add to their scientific vocabulary.

Unit objectives

- Students will be able to identify the different stages of a butterfly's life cycle are egg, larva, caterpillar, chrysalis, and adult.
- Students will be able to identify and explain why Caterpillars and all living things need food, air, and a space to live and grow.
- Students will be able to observe the caterpillar forming a chrysalis and a butterfly emerging from the chrysalis.
- Students will be able to explain why a butterfly needs food to live, but it doesn't grow after emerging from the chrysalis.
- Students will be able to explain the concept of a butterfly laying eggs, which hatch in larvae.
- Students will be able to recall how butterflies can survive with out the care and help of humans once they are release into the world where they have room to fly, find a variety of food, and can mate and lay eggs.
- Students will be able to explain how butterflies are not only beautiful but are beneficial to our environment because they pollinate flowers and provide food for birds and other animals.

Students will obtain the following skills

- Observing, describing, and recording growth and change in the larva.
- Predicting, comparing, and discussing the larva's appearance and change over time.
- Communicating observations through drawing and writing.

- Relate or connecting observations of the butterfly's life cycle to students own growth and change.
 - Extending knowledge of butterflies through reading and interpretation of data.
-

Lesson #1 Getting Ready For Caterpillars – English Lesson

EALR's

Communication- The student uses communication strategies and skills to work effectively with others.

Communication C3.1 Use language to interact effectively and responsibly with others

Communication C3.2 Work cooperatively as a member of a group

Science- The student uses effective communication skills and tools to build and demonstrate understanding of science.

Science S4.1 Uses listening, observing, and reading skills to obtain science information

Writing- The student writes in a variety of forms for different audiences and purposes.

Writing W2.3 Write in a variety of forms

Reading- The student understands and uses different skills and strategies to read.

Reading R1.2 Build vocabulary through reading

Content Objectives

- Students will be able to label and identify caterpillar parts.
- Students will be able to discuss what caterpillars are and their life cycle.

Language Objectives

- Students will be able to use English to obtain, process, construct, and provide subject matter information in spoken and written form.
- Students will be able to use English to interact in the classroom

Sheltering Strategies

- Visual Scaffolding: Providing language support through visual images.

- Leveled Questions: Adjusting questioning strategies to the language levels of students.

Materials

- Chart paper
- Activity sheet “Labeling my caterpillar”
- Transparency “The caterpillars body”
- Transparency “The life cycle of a butterfly”
- Transparency “Labeling my caterpillar”
- Paper
- Pencils
- Crayons
- Life cycle calendar
- Activity Sheet “Drawing my caterpillar”
- Journals
- Book “I’m a caterpillar” by Jean Marzollo

Anticipatory set

The illustration of the caterpillar is displayed throughout the lesson. Teacher says, “Some caterpillars will be coming to live in the classroom for a while. We are going to watch them grow and change.” “ Can anyone tell me what they know about caterpillars?” This begins the brainstorming on chart paper.

Procedure

- Teacher reads the book, “I’m a caterpillar.” By Jean Marzollo.

- After the book is read teacher will ask, “Is there anything we can add to our chart paper about caterpillar?”
- Teacher prompts students with the following questions and point to pictures as needed for answering questions correctly.
 - What are caterpillars?
 - What do they look like?
 - Where have you seen caterpillars?
 - What were they doing?
 - What happens to caterpillars?
 - What do they look like when they are grown?
- Teacher shows and explains the life cycle calendar. Each student gets one to record dates of growth and change. Teacher explains that the calendar will be used to place dates of how the caterpillar grows and changes. Teacher also explains that this data will be used through out the unit to answer some of the questions we will have. Students will refer to and have the calendar readily available at all times to record data.
- Teacher passes out activity sheet, “Labeling my caterpillar.” Teacher displays transparency “Labeling my caterpillar.”
- (Guided Practice) As a class teacher will label caterpillar parts with the students doing the same on their own paper. As each body part is labeled the teacher will ask, “What do you think this body part is used for?” Teacher will write ideas down on chart paper and then read aloud what each body part is used for.

- (Independent practice) Each student will then get an activity sheet, “Drawing my caterpillar.” Teacher will then read aloud the body parts that need to be drawn. Teacher uses “Drawing my caterpillar: Teacher read aloud directions” this can be found with the activity sheet “Drawing my caterpillar.” Once the teacher is done explaining what needs to be drawn students can work in pairs to compare each other work and discuss what they did on their drawings.
- (Checking for understanding) As a class we will go over the drawing activity so that students can check how they did. Students will then write in their journals what they learned.

Assessment

The teacher will use the following to assess students. A “4” is above grade level, “3” at grade level, “2” working towards grade level, “1” below grade level.

- Teacher will collect activity sheet “Drawing my caterpillar” and check to see that each student has labeled and drawn at least six caterpillar parts correctly. “4”
- The students has labeled and drawn four things correctly. “3”
- The student has labeled and drawn two things correctly. “2”
- The student has not labeled or drawn anything. “1”

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Labeling my Caterpillar

Activity Sheet

Poner etiqueta en mi Oruga

Hoja de Actividad

The caterpillar's body

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El Cuerpo de la Oruga

The life cycle of a butterfly

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Labeling my Caterpillar

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The Life Cycle of Butterflies, Carolina Biological Supply Company, 1992.

Poner etiqueta en mi Oruga

Drawing my Caterpillar

Teacher read aloud Directions

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Drawing my Caterpillar

Hoja de Actividad

Dibujando mi Oruga

The Life Cycle Calendar

***Sample Class Calendar**

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Lesson #2 Caring For Caterpillars – English Lesson

EALR's

Communication- The student uses listening and observation skills to gain understanding.

Communication C1.2 Listen and observe to gain and interpret information

Communication- The student uses communication strategies and skills to work effectively with others.

Communication C3.1 Use language to interact effectively and responsibly with others

Reading- The student understands and uses different skills and strategies to read.

Reading R1.2 Build vocabulary through reading

Reading- The student reads different materials for a variety of purposes.

Reading R3.1 Read to learn new information

Science- The student understands and uses scientific concepts and principles.

Science S1.2 Identify, describe, and categorize living things based on their characteristics

Science- The student uses effective communication skills and tools to build and demonstrate understanding of science.

Science S4.1 Use listening, observing, and reading skills to obtain science information

Writing- The student writes in a variety of forms for different audiences and purposes.

Writing W2.2 Write for different purposes

Writing W2.3 Write in a variety of forms

Objectives

- Students will be able to care for their caterpillars

- Students will be able to identify what caterpillars and all living things need to survive.
- Students will be able to identify the foods caterpillars eat.

Language Objectives

- The student will be able to use English to interact in the classroom.
- The student will be able to use English to obtain, process, construct, and provide subject matter information in spoken and written form.

Sheltering Strategies

- Language experience approach: Building on an experience to create a written account
- Modeled talk: Showing while you talk

Materials

- Book "What's alive" by Kathleen Zoehfeld
- Chart paper
- Transparency "Malva neglecta/Round leaved mallow"
- Activity sheet "Caterpillar food"
- 1 ounce cup with lid, tissue, and label for each student
- 1 teaspoon of caterpillar food for each student
- Hand lens for each student
- Activity sheet "Observing my caterpillar"
- Activity sheet "Taking care of my caterpillar"
- Caterpillar parts cards with word and drawing for labeling on white board
- Journals

Anticipatory set

Today we get our caterpillars and make homes for them. "Who can tell me what we have learned about so far?" As teacher asks this question there is a caterpillar drawing on the white board. Teacher passes out caterpillar parts cards with words and pictures. Teacher says a body part and that student stands and places card in the appropriate spot on the caterpillar on the white board.

Procedure

- "Who can tell me what they think a caterpillar needs in order to live?" Teacher writes all ideas on chart paper.
- Teacher read book "What's alive" by Kathleen Zoehfeld
- After teacher is done reading the book. The teacher will ask, "Is a caterpillar a living thing?" and "Is there anything we learned from reading the book that we can add to our chart paper on what a caterpillar needs to live?" "How do you know if something is alive?" "Do people have the same needs?" "Are we considered a living thing?" Teacher explains that caterpillars need food, water, shelter, and air. Teacher asks students to think of other things that are living, and teacher chart those ideas on chart paper.
- Teacher explains that we need to provide homes with food and air for our caterpillars. Teacher shows the children the caterpillar food and explains that it is processed/broken down from plants they would eat if they were in the wild. Teacher shows an illustration transparency of the button weed plant.
- Students get into groups of six.
- Teacher passes out the 1 ounce cups with lid, tissue, label and hand lens to each

student. Each group gets 2 teaspoons and 1 container of caterpillar food. The teacher has the same supplies in front of the class to use as a demonstration/visual guide to incorporate the ESL strategy modeled talk.

- First teacher asks students to write their names on the label and place it on their cup. Then each student taking turns since there is only 2 teaspoons at each group and there are six in a group each student places 1 teaspoon of caterpillar food in their cup. Students will then pack the food down into the cup. Teacher will explain that loose food can crush the caterpillar so it's important to pack the food down.
- Students using the hand lens observe caterpillar food and the shelter they are providing for the caterpillar. They write in their journals their observations.
- (Guided Practice) Teacher charts all student ideas and discuss more about the diet of caterpillars, the food they are providing and asks the following questions.
 - What is the color, texture, odor/smell of the food?
 - What does a caterpillar eat? (green leafy things, button weed)
 - How does the caterpillar get water? (moisture in the food provides water)
 - How does the caterpillar get air? (the holes in the cup provide air)
 - How does the caterpillar get shelter? (the cup provides shelter)
- (Independent practice) Teacher passes out activity sheet "Caterpillar food" students fill out sheet and then get in pairs within their group and discuss activity sheet.
- Before students get a caterpillar the teacher has a class discussion on why we wouldn't shake or hold our cup with the caterpillar upside down. Students each get a

caterpillar distributed by the teacher. Once all the students have their caterpillar students place tissue and lid on their cups. The teacher also explains that the tissue is so that the caterpillar can attach to it when it forms its' chrysalis.

- (Guided Practice) Students observe their caterpillar and write in their journals their observations. Teacher also charts some observations from the whole class. Students also write on their life cycle calendar the date when they got their caterpillar.
- (Independent Practice) Teacher passes out activity sheets "Observing my caterpillar" and "Taking care of my caterpillar." Students work independently to fill out activity sheet then get into pairs and discuss activity sheet.
- (Checking for understanding) Students write in their journals what they learned and what they think their caterpillars will look like tomorrow. Students discuss with each other what they wrote in their journals.

Assessment

The teacher will collect student journals to assess what students have learned. A "4" is above grade level, "3" at grade level, "2" working towards grade level, "1" below grade level.

- The student has written at least four things they have learned and has written a prediction for their caterpillars. "4"
- The student writes at least two things they have learned and a prediction. "3"
- The student writes at least one thing they have learned and a prediction. "2"
- The student does not write anything. "1"

Caterpillar Food

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Malva Neglecta/Round- leaved mallow

Malva Neglecta/Redonda- hoja mallow

Lección #3 Observando a Las Orugas – Lección en español

EALR's

Communication- The student uses listening and observation skills to gain understanding.

Communication C1.2 Listen and observe to gain and interpret information

Communication- The student uses communication strategies and skills to work effectively with other.

Communication C3.1 Uses language to interact effectively and responsibly with others

Reading- The student understands and uses different skills and strategies to read.

Reading R1.2 Build vocabulary through reading

Reading- The student reads different materials for a variety of purposes.

Reading R3.1 Read to learn new information

Science- The student conducts scientific investigations to expand understanding of the natural world.

Science S2.3 Practice the principles of scientific inquiry

Science- The student uses effective communication skills and tools to build and demonstrate understanding of science.

Science 4.1 Use listening, observing, and reading skills to obtain science information

Writing- The student writes in a variety of forms for different audiences and purposes.

Writing W2.2 Write for different purposes

Writing W2.3 Write in a variety of forms

Objetivos de Contenido

- Los estudiantes serán capaces de identificar los cambios en la oruga.
- Los estudiantes serán capaces de usar vocabulario asociado con su oruga.

- Los estudiantes serán capaces de identificar más de cerca las partes de la oruga.

Objetivos de Lenguaje

- Los estudiantes serán capaces de usar el idioma español para interactuar en el salón de clase.
- Los estudiantes serán capaces de usar el idioma español para obtener, procesar, construir y proveer información del tema de la materia de manera oral y escrita.
- Los estudiantes serán capaces de usar el idioma español para participar en interacciones sociales.

Sheltering Strategies

- Modeled Talk: Showing while you talk
- Language Experience Approach: Building on an experience to create a written account
- Manipulative Strategies: Using objects to connect concepts

Materiales

- Bomboncillos
- Broches de latón
- Cordón
- Limpia pipas
- Marcadores negros
- Papel para gráfica
- Lápices
- Papel
- Lupas

- Hoja de actividad “Dibujando a mi oruga”
- Cuadernos de notas

Etapa previa a la lección

El maestro(a) dice, “¡Observemos nuestras orugas y veamos si han cambiado!”

Los estudiantes toman tiempo para observar a sus orugas.

Procedimiento

Los estudiantes observan a las orugas y escriben en sus cuadernos sobre ellas. Si es necesario, pueden escribir la fecha en su calendario del ciclo de vida. El calendario del ciclo de vida se usa para escribir las fechas de cuando la oruga ha pasado por uno de los ciclos de vida, también para saber cuántos días duró la oruga en cada etapa de su ciclo de vida.

- El maestro(a) hace y escribe las siguientes preguntas en un tablero blanco para indicar a los estudiantes lo que deben buscar durante el tiempo de observación. Esto también ayuda a que surja la conversación en grupo sobre lo que ven.
 - ¿De qué color es la oruga?
 - ¿De qué tamaño es?
 - Describe su figura.
 - ¿En qué extremo está la cabeza y cómo lo sabes?
 - ¿Cuántas patas puedes contar?
 - Describe como se mueve la oruga.
 - ¿Qué clase de cobertura tiene su cuerpo?
- Como clase, vemos el calendario del ciclo de vida y hablamos y escribimos nuestras predicciones de los siguientes puntos:

- ¿Por cuánto tiempo más, la oruga será una oruga?
 - ¿Cuántos días ha sido una oruga?
 - ¿Cuándo pensamos que se convertirá en una crisálida?
 - ¿Cuándo pensamos que se convertirá en una mariposa?
 - ¿Cuántos días piensas que durará cada ciclo/etapa?
-
- El maestro(a) dice: “Ahora que hemos observado a nuestra oruga y que hemos aprendido mucho sobre las orugas, vamos a hacer un modelo de una oruga y escribiremos el nombre de sus partes”.
 - Usando la hoja de actividades “Dibujando a mi oruga” que se hizo previamente y las observaciones que realizaron, el estudiante comienza a construir su modelo de oruga.
 - Los siguientes materiales estarán en la mesa: Bomboncillos (cuerpo), broches de latón (patas), limpia pipas (antenas, cerdas), cordón para unir todo, marcadores negros (ojos, espiráculos).
 - El maestro(a) organizará a los estudiantes en grupos para que recojan los materiales que necesitan para hacer sus orugas.
 - (Práctica orientada e independiente) Una vez que todos tengan sus materiales el maestro(a) mostrará como unir los 13 bomboncillos para hacer el cuerpo. El maestro(a) preguntará a los estudiantes: “¿Cuántos bomboncillos necesitamos?” “¿Cuántos broches necesitan?” El maestro(a) pedirá a los estudiantes que cuenten y se aseguren de tener 13 bomboncillos que representan los 13 segmentos que tiene una oruga y 16 broches que representan las 16 patas. A partir de este momento, los estudiantes trabajarán independientemente en su modelo.

- Los estudiantes usarán como referencia sus orugas reales y la hoja de actividad “Dibujando a mi oruga”. Ya que han unido el cuerpo, cada estudiante construirá independientemente su modelo de oruga.
- (Revisar si el estudiante entiende). Al terminar sus modelos, ellos lo usarán para hablar de las partes de la oruga con otro estudiante. Los estudiantes que no hablen o hablen poco inglés se agruparán con estudiantes que hablen bien el inglés.
- Los estudiantes escribirán en sus cuadernos lo que aprendieron de la anatomía de una oruga.

Assessment

The teacher will go around the room and use each of the student’s caterpillar models and ask each student to discuss their caterpillar model to the teacher. A “4” is above grade level, “3” is at grade level, “2” is working towards grade level, “1” is below grade level.

- The student is able to tell at least six things about their model. “4”
- The student is able to tell at least four things about their model. “3”
- The student is able to tell at least two things about their model. “2”
- The student is not able to discuss their model at all. “1”

Lección #4 Observando el Cambio: Crecimiento y Cambio de Piel – Lección en español

EALR's

Communication- The student uses listening and observation skills to gain understanding.

Communication C1.2 Listen and observe to gain and interpret information

Communication- The student uses communication strategies and skills to work effectively with others.

Communication C3.1 Use language to interact effectively and responsibly with others

Reading- The student understands and uses different skills and strategies to read.

Reading R1.2 Build vocabulary through reading

Reading- The student reads different materials for a variety of purposes.

Reading R3.1 Read to learn new information

Science- The student conducts scientific investigations to expand understanding of the natural world.

Science S2.3 Practice the principles of scientific inquiry

Science- The student uses effective communication skills and tools to build and demonstrate understanding of science.

Science S4.1 Use listening, observing, and reading skills to obtain science information

Writing- The student writes in a variety of forms for different audiences and purposes.

Writing W2.2 Write for different purposes

Writing W2.3 Write in a variety of forms

Objetivos de Contenido

- Los estudiantes serán capaces de observar la evidencia de cambios como por ejemplo, la muda de piel, muda de cabeza, cápsula, aumento de excremento y disminución de comida.
- Los estudiantes serán capaces de observar el crecimiento y cambios en las orugas y discutir y comparar esto con los cambios de su propio cuerpo.

Objetivos de Lenguaje

- Los estudiantes serán capaces de usar el idioma español para interactuar en el salón de clase.
- Los estudiantes serán capaces de usar el idioma español para obtener, procesar, construir y proveer información del tema de la materia en manera oral o escrita.
- Los estudiantes serán capaces de demostrar el tema de la materia por medio de la manipulación de objetos y visualmente.

Sheltering Strategies

- Leveled questions: Adjusting questions strategies to the level of students
- Manipulative Strategies: Using objects to connect concepts
- Visual Scaffolding: Providing support through visual images

Materiales

- Hoja de actividades “Mi oruga y yo”
- Lápices
- Oruga viva del estudiante
- Papel para gráfica
- Transparencia “La oruga mudando”

- Dibujos del vocabulario nuevo (exoesqueleto, excremento, muda) Transparencia “La oruga mudando” trabaja bien para esto también.
- Libro “Yo y mi asombroso cuerpo” por Joan Sweeney
- Cuadernos de notas

Etapa previa a la lección

“¿Cómo han cambiado desde que estaban en kindergarten?” “¿Pueden usar los mismos zapatos o ropa que usaban en kindergarten?” El maestro(a) registra las respuestas.

Procedimiento

- El maestro(a) explica que de la misma manera en que nosotros hemos cambiado también lo hacen las orugas. El maestro(a) pregunta: “¿Quién piensan que es el responsable de nuestro crecimiento y cambio?” “Y otros animales, ¿cambian?” El maestro(a) registra todas las ideas de los estudiantes.
- Introduce vocabulario nuevo usando dibujos (exoesqueleto- un esqueleto rígido externo/piel, excremento- pequeñas bolitas verdes de desperdicio (popo), mudar la piel). El maestro(a) muestra dibujos y pregunta a los estudiantes lo que piensan que puede ser.
- Hoy vamos a ver una de las maneras en que las orugas cambian. El maestro(a) les explica mostrándoles transparencias de dibujos de una oruga mudando de piel. Como clase, discutimos lo que es la muda de piel y lo que esto involucra (la piel separándose cerca de la cabeza, la piel separándose a todo lo largo del cuerpo de la oruga, la cápsula dura y la muda del exoesqueleto están en el fondo del vaso).

- (Práctica orientada) Los estudiantes observan con lupas a sus orugas y escriben en sus cuadernos. Si es necesario, también pueden escribir en sus calendarios del ciclo de vida. El maestro(a) hace preguntas para motivar a los estudiantes a que observen usando dibujos para que puedan responder correctamente.
 - ¿Qué piensan que hay en el vaso que no estaba ahí la última vez?
 - ¿Qué piensan que puede ser?
 - ¿La oruga se ve más grande?
- El maestro(a) anima a los estudiantes a que usen el vocabulario nuevo como excremento, piel mudada o cápsula de la cabeza, usando dibujos para motivar a dar respuestas correctas. Quizás algunos estudiantes vean a sus orugas mudar de piel.
- Una vez que los estudiantes hayan registrado sus observaciones, el maestro(a) recuerda a los estudiantes que igual que los humanos cambian, también las orugas lo hacen. El maestro(a) lee el libro, “Yo y mi sorprendente amigo” de Joan Sweeney.
- El maestro(a) sostiene una plática con la clase y usa un diagrama de Venn para graficar las ideas aprendidas en el libro acerca de como cambian los humanos. La clase también registra ideas de cómo las orugas cambian y hablan de las similitudes y de las diferencias.
- (Práctica independiente) El maestro(a) reparte la hoja de actividades “Mi oruga y yo.” Los estudiantes trabajan independientemente para completar la hoja de actividades.
- (Revisar si el estudiante entiende). En la hoja de actividades “Mi oruga y yo”, los estudiantes llevan a cabo discusiones de grupo, mientras que el maestro(a) camina alrededor del salón de clase y facilita la discusión. Los estudiantes también, cuando

es necesario, registran las fechas del ciclo de vida en sus calendarios. Una vez más escriben las fechas de cuando observaron mudas, cuando vieron el tejido de seda, cuando vieron que estaba colgando al revés en forma de “J”, cuando se convirtió en crisálida y cuando se convirtió en mariposa.

- Los estudiantes escriben en sus diarios lo que aprendieron.

Assessment

The teacher will collect the student journals to use as an assessment. A “4” is above grade level, “3” is at grade level, “2” is working towards grade level, “1” is below grade level.

- The student has described changes in the caterpillar using at least two of the new vocabulary words appropriately and has compared the caterpillar changes to the changes in our own bodies. “4”
- The student has described changes in the caterpillar using at least one of the new vocabulary words appropriately and has compared the caterpillar changes to the changes in our own bodies. “3”
- The student as described changes in the caterpillar but has not used any of the new vocabulary and has compared the caterpillar changes to the changes in our own bodies. “2”
- The student has not written anything. “1”

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La Oruga Mudando

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1.

Lesson #5 A Caterpillars Head and Silk Spinning – English Lesson

EALR's

Communication- The student uses listening and observation skills to gain understanding.

Communication C1.2 Listen and observe to gain and interpret information

Communication C1.3 Checking for understanding by asking questions and paraphrasing

Reading- The student understands and uses different skills and strategies to read.

Reading R1.2 Build vocabulary through reading

Reading- The student reads different materials for a variety of purposes.

Reading R3.1 Read to learn new information

Science- The student conducts scientific investigations to expand understanding of the natural world.

Science S2.3 Practice the principles of scientific inquiry

Science- The student uses effective communication skills and tools to build and demonstrate understanding of science.

Science S4.1 Use listening, observing, and reading skills to obtain science information

Writing- The student writes in a variety of forms for different audiences and purposes.

Writing W2.2 Write for different purposes

Writing W2.3 Write in a variety of forms

Content Objectives

- Students will be able to discuss how a caterpillar uses silk and how it's made.
- Students will be able to draw and observe silk threads spun by a caterpillar.
- Students will be able to compare how humans use silk and caterpillars use silk.

Language Objectives

- The student will be able to use English to interact in the classroom.
- The student will be able to use English to obtain, process, construct, and provide subject matter information in spoken and written form.

Sheltering Strategies

- Read aloud plus: Using this to support understanding while teaching comprehension strategies
- Language Experience Approach: Building on an experience to create a written account.

Materials

- Live caterpillars
- Pencils
- Hand lens
- Transparency “A Chinese Legend and the history of silk”
- Activity sheet “A caterpillar and its silk”
- Transparency “A caterpillars head”
- Transparency “A caterpillar molting” point out the silk spinning
- Journals

Anticipatory Set

As students observe their caterpillar cups, teacher asks, “Does anyone see fine string all around the inside of their caterpillar cup?” On chart paper teacher charts all ideas on what they think it is and what it’s used for.

Procedure

- Teacher places transparency of the caterpillars head with labeled parts and reads aloud facts on silk spinning (what it's used for, how caterpillars make it, and when caterpillars sway their heads it is spinning silk).
- (Guided Practice) Teacher introduces new vocabulary using visuals (Silk spinning- fine thread that caterpillars use to hang upside down. They can rest, eat, or molt).
- Now that the students have some background about silk spinning, teacher asks, "Is there anything about caterpillars and silk spinning that we can add to our chart paper?"
- Students observe caterpillar cups and teacher asks students to pay close attention to the silk, especially the amount of silk and the crisscross patterns. Students record observations in their journals and their life cycle calendar.
- Teacher explains that soon the caterpillars will spin their last strand of silk into a sturdy/strong button so they can hang and start the next stage of their life cycle. "Does anyone know what that next stage is?" (chrysalis)
- (Independent Practice) Students complete independently activity sheet "A caterpillar and its silk"
- (Checking for Understanding) Students come together in pairs to discuss what they came up with on their activity sheet.
- Teacher passes out several clothing items to each group and asks the children to look at the tags and look for what each piece of clothing is made of. The teacher writes the word "silk" on the board so student know what to look for on the tags.

- Teacher states, “Know that we have learned about silk we are going to learn about a special kind of caterpillar called the silk worm and how humans use silk. Many of you have just learned that some of the clothes we wear can be made from silk.
- Teacher reads aloud “A Chinese legend and the history of silk.” Teacher uses read aloud plus extension activities (reading and clarifying, stopping for clarifications and using visuals throughout the read aloud). Some of the facts that should be stressed are the following.
 - We get silk from a silk worm, which is a moth larva that spins a silk cocoon.
 - Moth and butterflies are closely related but moths spin a cocoon and butterflies form a chrysalis.
 - People have learned how to unravel the cocoons and use the thread to make fabrics just like the ones we have looked at today.
- If students are still unsure another good book is, “A silkworm story” by Jennifer Coldrey. It contains information with visual on the life of a silkworm. Teacher may read aloud to student or students can read it on their own time.
- (Checking for Understanding) Students write in journals what they learned and make prediction on what they think their caterpillar will look like.

Assessment

The teacher will collect and use the journals as an assessment. A “4” is above grade level, “3” is at grade level, “2” is working towards grade level, “1” is below grade level.

- The student has written at least four things they have learned in this lesson and has made a prediction. “4”
- The student has written at least two things they have learned in this lesson and has made a prediction. “3”
- The student has written one thing they have learned in this lesson and has not made a prediction. “2”
- The student has not written anything or what they have written has nothing to do with the lesson taught. “1”

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A Caterpillar and Its Silk

Activity Sheet

A Chinese Legend and the History of Silk

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A Chinese Legend and the History of Silk

The Life Cycle of Butterflies, Carolina Biological Supply Company, 1992.

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Please note: Content on this page was redacted due to copyright concerns.

The caterpillar's head

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La Cabeza de la Oruga

A caterpillar molting

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Lección #6 De Oruga a Crisálida – Lección en español**EALR's**

Communication- The student uses listening and observation skills to gain understanding.

Communication C1.2 Listen and observe to gain and interpret information

Communication- The student uses communication strategies and skills to work effectively with others.

Communication C3.1 Use language to interact effectively and responsibly with others

Communication C3.2 Work cooperatively as a member of a group

Reading- The student understands and uses different skills and strategies to read.

Reading R1.2 Build vocabulary through reading

Reading- The student understands the meaning of what is read.

Reading R2.2 Expand comprehension by analyzing, interpreting, and synthesizing information and ideas

Science- The student conducts scientific investigations to expand understanding of the natural world.

Science S2.3 Practice the principles of scientific inquiry

Science- The student uses effective communication skills and tools to build and demonstrate understanding of science.

Science S4.1 Use listening, observing, and reading skills to obtain science information

Writing- The student writes in a variety of forms for different audiences and purposes.

Writing W2.2 Write for different purposes

Writing W2.3 Write in a variety of forms

Objetivos de Contenido

- Los estudiantes serán capaces de observar la forma de “J” de la crisálida.
- Los estudiantes serán capaces de observar la etapa del ciclo de vida llamada “crisálida”.
- Los estudiantes serán capaces de discutir e identificar los cambios en sus orugas.

Objetivos de Lenguaje

- Los estudiantes serán capaces de usar el idioma español para responder apropiadamente mediante el uso de imágenes visuales.
- Los estudiantes serán capaces de usar el idioma español para interactuar en el salón de clase.
- Los estudiantes serán capaces de usar el idioma español para obtener, procesar, construir y proveer información del tema de la materia de manera oral y escrita.

Sheltering Strategies

- Modeled talk: Showing while you talk
- Visual Scaffolding: Providing language support through visual images
- Language Experience Approach: Building on an experience to create a written account
- Partner Work: Practicing verbal interaction

Materiales

- Vasos de las orugas
- Lupas
- Cuadernos de notas
- Lápices

- Frascos con hoyos en las tapaderas
- Servilletas de papel
- Hoja de actividad “Qué le pasa a la oruga”
- Transparencia “De oruga a crisálida”
- Transparencia de Poema “La Oruguita Feliz”

Etapas previas a la lección

Poema, “La Oruguita Feliz” de canciones y poemas del Internet, autor desconocido. El maestro(a) actúa el poema.

“Oruguita divertida

Arrastrándose en el suelo.

Oruguita divertida

En ningún lugar se puede encontrar.

Aunque hemos buscado y buscado

¡Y cazado por todo lugar!”

“¿Alguien puede decirme lo que significa el poema?” El maestro(a) registra las ideas y explica a la clase. Recuerden que cuando comenzamos esta unidad les pedí a todos que trajeran una caja para zapatos. La caja para zapatos la vamos a usar como una casa nueva para la oruga y necesitamos prepararla.

Procedimiento

- (Práctica orientada). Los estudiantes observan los vasos de sus orugas. El maestro(a) escribe en el pizarrón y les pide a los estudiantes que busquen lo siguiente:
 - El tamaño de la oruga (1-1 1/2 pulgadas)
 - Nivel de actividad

- ¿Han tejido un botón de seda?
 - ¿Las orugas están en una posición de “J”?
- Los estudiantes escriben en sus diarios y en sus calendarios del ciclo de vida.
 - El maestro(a) anima a los estudiantes a que observen a las orugas de los demás porque quizás las de ellos estén en diferentes etapas.
-
- El maestro(a) muestra la transparencia “De oruga a crisálida.” El maestro(a) explica que la oruga medirá aproximadamente de 1 a 1 1/2 pulgada y que se colgará con la cabeza hacia abajo en forma de “J”, estas son las señales que nos indican que pronto se formará la crisálida. El maestro(a) presenta la nueva palabra de vocabulario “crisálida” y explica que esta es la tercera etapa del ciclo de vida de la mariposa. El maestro(a) también explica que aunque se vea que la crisálida no tiene movimiento y que parezca que nada está ocurriendo, sí está ocurriendo. De vez en cuando se puede observar que su crisálida se estremece.
 - Los estudiantes observan a sus orugas y escriben en sus cuadernos y en sus calendarios del ciclo de vida. El maestro(a) le pide a los estudiantes que escriban en sus cuadernos lo que piensan que está pasando.
 - El maestro(a) dice: “Quizás algunos de ustedes habrán notado que su oruga mide aproximadamente de 1 a 1 1/2 pulgada y está colgando de un botón de seda en forma de “J” y también habrán notado que sus orugas ya son crisálidas. Así que tenemos que estar listos y hacer casas nuevas para que ellas tengan más espacio para crecer. Tal vez las orugas de algunos de ustedes todavía no estén haciendo esto, pero lo harán pronto, y así que todos necesitamos estar listos y debemos preparar las casas nuevas”.

- El maestro(a) conduce una plática sobre porqué algunas orugas están o no están mostrando señales de que están cambiando a crisálida o ya son una crisálida, y registra todas las ideas en el papel para gráfica. La meta es que los estudiantes entiendan que al igual que las personas, ellas son individuos y se desarrollan a su propio paso. Todas las orugas son diferentes al igual que los humanos.
- El maestro(a) tiene los materiales enfrente del salón de clase (frascos de vidrio con tapadera con hoyos, uno para cada estudiante). El maestro(a) sostiene uno de los frascos con tapadera y pregunta, “¿Por qué esta tapadera tiene hoyos?” El maestro(a) recuerda a los estudiantes lo que hemos aprendido de los seres vivos, y ya que hemos descubierto que una oruga es un ser vivo, por lo tanto necesita aire y los hoyos se lo proveerán. Las servilletas de papel estarán en el fondo del frasco. El maestro(a) pregunta: “¿Para que piensan que servirán las servilletas de papel?” Las servilletas de papel se usarán para absorber los líquidos que la mariposa expele cuando emerge y también le ofrece a la mariposa algo de qué sostenerse.
- El maestro(a) explica que hay una cosa más que necesitan y que todavía no la tienen. “¿Pueden pensar en algo más que necesita la casa nueva?” Una vez que la mariposa haya emergido, la mariposa necesitará algunas ramitas para poder descansar (posarse). El maestro(a) les dice a los estudiantes que irán a una excursión corta afuera para buscar las ramitas para la casa nueva. La clase va afuera al área de juego y a lo largo del “Camino del Canal” en Yakima (enseguida de la escuela). Una vez que todos tengan algunas ramas regresaremos al salón de clase.
- El maestro(a) reparte los frascos con tapadera y las servilletas de papel. El maestro(a) tiene los mismos materiales para usarlos como demostración. El maestro(a) pide a los

estudiantes que abran los frascos y les muestra como poner las servilletas de papel. Luego el maestro(a) muestra como colocar las ramitas que juntaron arriba de las servilletas de papel que están dentro del frasco. Una vez hecho esto, las casas nuevas están listas.

- Tal vez algunos estudiantes estén listos para mover sus crisálidas al frasco. Si es así, el maestro(a) trabaja con cada estudiante para llevar a las crisálidas a sus casas nuevas. El maestro(a) recuerda a los estudiantes que manejen con cuidado a las crisálidas. Si están listas para la casa nueva, el maestro(a) ayuda a los niños a hacer lo siguiente:
 - El estudiante con cuidado quita la tapadera del vaso de la crisálida.
 - El maestro(a) coloca arriba del papel, cinta adhesiva con goma por ambos lados.
 - Los niños pegan papel por los lados hasta el fondo del frasco por si se caen, la caída no será de muy alto y ni lastimará o dañará a las crisálidas.
- (Práctica independiente) Los niños completan la hoja de actividad “¿Qué le pasa a la oruga?” Cuando terminen discuten con un compañero la hoja de actividad.
- (Revisar si el estudiante entiende) Los estudiantes escriben lo que aprendieron en sus cuadernos.

Assessment

The teacher will collect the activity sheet, "What happens to the caterpillar" and use it to assess students. A "4" is above grade level, "3" at grade level, "2" working towards grade level, "1" below grade level.

- The student has completed the activity sheet with no mistakes. "4"
- The student has completed the activity sheet with one mistake. "3"
- The student has completed the activity sheet with two mistakes. "2"
- The student has not completed the activity sheet at all or has completed it but has it all wrong. "1"

¿Qué le pasó a la oruga?

Hoja de Actividad

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What Happens to the Caterpillar?

Activity Sheet

De Oruga a crisálida

From caterpillar to chrysalis

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Poema “La oruguita Feliz”

Poem “Funny Little Caterpillar”

Lección #7 Observando la Crisálida – Lección en español**EALR's**

Communication- The student uses listening and observation skills to gain understanding.

Communication C1.2 Listen and observe to gain and interpret information

Reading- The student understands and uses different skills and strategies to read.

Reading R1.2 Build vocabulary through reading

Reading- The student reads different materials for a variety of purposes.

Reading R3.1 Read to learn new information

Science- The student conducts scientific investigations to expand understanding of the natural world.

Science S2.2 Think logically, analytically, and creatively

Science S2.3 Practice the principles of scientific inquiry

Science- The student uses effective communication skills and tools to build and demonstrate understanding of science.

Science S4.1 Use listening, observing, and reading skills to obtain science information

Writing- The student writes in a variety of forms for different audiences and purposes.

Writing W2.2 Write for different purposes

Writing W2.3 Write in a variety of forms

Objetivos de Contenido

- Los estudiantes serán capaces de predecir lo que emergerá de la crisálida y cuándo emergerá.
- Los estudiantes serán capaces de ilustrar y nombrar sus crisálidas.

- Los estudiantes serán capaces de discutir que, aunque no parezca que están sucediendo cosas en la crisálida, sí están pasando.

Objetivos de Lenguaje

- Los estudiantes serán capaces de usar el idioma español para interactuar en el salón de clase.
- Los estudiantes serán capaces de usar el idioma español a través de ayuda visual para usar vocabulario.
- Los estudiantes serán capaces de usar el idioma español para obtener, procesar, construir y proveer información del tema de la materia de manera oral y escrita.

Sheltering Strategies

- Language Experience Approach: Building on an experience to create a written account
- Visual Scaffolding: Providing support through visual images
- Partner work: Practicing verbal interaction

Materiales

- Lupas
- Hoja de actividad “Observando mi crisálida”
- Cada crisálida de los estudiantes estará en su casa nueva
- Lápices
- Cuadernos
- Papel para gráfica

Etapa previa a la lección

La mayoría de nosotros hemos movido nuestras _____ (el maestro(a) tiene una transparencia con dos diferentes vistas de una crisálida y la señala para que los estudiantes digan crisálidas) a sus casas nuevas.

(Práctica orientada) Hoy vamos a observar muy de cerca a nuestras crisálidas para ver si podemos ver un botón de seda, un abdomen, una antena, alas, probóscide (boca) y ojos.

La mayoría de estas partes del cuerpo que vamos a ver, son partes del cuerpo que se están formando de lo que emergerá de la crisálida.

Procedimiento

- Los estudiantes observan sus crisálidas y registran sus observaciones en sus cuadernos y también, si es necesario, escriben en el calendario del ciclo de vida.
- (Práctica independiente) El maestro(a) reparte la hoja de actividad “Observando mi crisálida” y los estudiantes trabajan independientemente.
- (Revisar si el estudiante entiende) Los estudiantes se agrupan con un compañero y comparten los hallazgos de sus observaciones y su hoja de actividades “Observando mi crisálida.”
- El maestro(a) conduce una plática sobre lo que los estudiantes piensan que está pasando en la crisálida. El maestro(a) también pregunta: “¿Piensan qué a lo mejor no está ocurriendo ninguna actividad en la crisálida?” El maestro(a) registra las ideas en el papel para gráfica. El maestro(a) ayuda a los niños a entender que, aunque parezca que no está pasando nada, si lo está. El maestro(a) también ayuda a los estudiantes a entender que las partes del cuerpo que están viendo en la crisálida son las partes del cuerpo de la mariposa.

- Los estudiantes escribirán en sus cuadernos lo que aprendieron y harán predicciones acerca de lo que emergerá y cuando lo hará.

Assessment

The teacher will collect the activity sheet, "Observing my chrysalis" to use as an assessment. A "4" is above grade level, "3" is at grade level, "2" is working towards grade level, "1" below grade level.

- The student has described at least four things they have observed and made a prediction. "4"
- The student has described three things they have observed and make a prediction. "3"
- The student has described two things with no prediction. "2"
- The student has not completed the activity. "1"

Dos vistas de la crisálida

Two views of the chrysalis

Lesson #8 The Butterfly Emerges/The Butterfly's Body – English Lesson**EALR's**

Communication- The student uses listening and observation skills to gain understanding.

Communication C1.2 Listen and observe to gain and interpret information

Communication C1.3 Checking for understanding by asking questions and paraphrasing

Reading- The student understands and uses different skills and strategies to read.

Reading R1.2 Build vocabulary through reading

Reading- The student reads different materials for a variety of purposes.

Reading R3.1 Read to learn new information

Science- The student understands and uses scientific concepts and principles.

Science S1.2 Identify, describe, and categorize living things based on their characteristics

Science- The student conducts scientific investigations to expand understanding of the natural world.

Science S2.3 Practice the principles of scientific inquiry

Science- The student uses effective communication skills and tools to build and demonstrate understanding of science.

Science S4.1 Use listening, observing, and reading skills to obtain science information

Writing- The student writes in a variety of forms for different audiences and purposes.

Writing W2.2 Write for different purposes

Writing W2.3 Write in a variety of forms

Content Objectives

- Students will be able to label and identify butterfly body parts.
- Students will be able to compare butterflies to themselves.

- Students will be able to discuss the use of each of the butterfly's body parts.

Language Objectives

- The student will be able to use English to interact in the classroom.
- The student will be able to use English through the help of visuals to identify butterfly body parts.
- The student will be able to use English to obtain, process, construct, and provide subject matter information in spoken and written form.

Sheltering Strategies

- Partner work: Practicing verbal interaction
- Language Experience Approach: Building on an experience to create a written account
- Visual Scaffolding: Providing language support through visual images
- Read Aloud Plus: Using this to support understanding while teaching comprehension strategies

Materials

- Transparency "A butterfly emerges"
- Transparency "Two views of a butterfly's body"
- Butterfly and Moth Discover the world of butterflies and moths in close up- their structure, behavior, habitats, and secret life by Paul Whalley
- Transparency "The butterfly's head"
- Activity sheet "My butterfly and me"
- Chart paper
- Pencil

- Journals

Anticipatory Set

Some of you may have noticed that something is emerging or has emerged from the chrysalis. Teacher displays transparency of when a butterfly first emerges, and points to the transparency as the teacher asks the question, "What do you think has emerged from the chrysalis?" (A butterfly) Today we get to observe our butterflies, we have observed the chrysalis and we also may have seen some of the body parts of the butterfly when we observed the chrysalis.

Procedure

- (Guided Practice) Students observe their butterflies and write in their journals their observations and also write on their life cycle calendar. Teacher explains to the children to think about the following questions as they observe. Teacher writes the questions on the board to help guide observations and also displays the transparency of the 2 views of a butterfly body and the transparency of the butterfly's head parts.
 - Look at the butterfly's head what body parts do you find on the head?
 - What do you think the butterfly uses these parts for?
 - Count the wings. How many are there?
 - What does a butterfly use its wings for?
 - How many legs are there?
 - What does a butterfly use its legs for?
- Teacher holds a class discussion on butterfly body parts and what they think they are used for and charts students ideas on chart paper. Teacher helps children to understand and see through observations that the eyes are to see, to find food, to find

a mate. The antennae is for touch and smell, the proboscis is for reaching nectar deep inside the flowers, the wings are for flying to food, to plants that it lays its eggs on, to fly away from predators, and for camouflage. The legs are to walk and taste. The butterfly has three main body parts: the head, thorax, and abdomen. The thorax holds the two pairs of wings and the 3 pairs of jointed legs. The abdomen has the sexual organs for mating.

- Using read aloud plus (stops and asks questions, clarifies, and summarizes) the teacher reads the book, "Butterfly and Moth" by Paul Whalley. After the book is read the teacher asks, "Is there anything new we learned from reading the book?"
- (Guided Practice) Teacher explains that we have seen a butterfly go through its life cycle. "Does anyone know the special name that is used when a butterfly goes through a life cycle?" (Metamorphoses) I want you to think back when we first got our caterpillars and up until today. What are some changes we have seen? What are the different life cycle stages? Teacher charts ideas on chart paper.
- Teacher asks children to think about the butterfly's body and their own body. How are they different? How are they alike? Teacher does a venn diagram activity with the class.
- (Independent Practice) Teacher passes out activity sheet "My butterfly and me." Students work independently.
- (Checking for Understanding) Students pair up and discuss and compare activity sheet "My butterfly and me."
- Students write in their journal what they learned.

Assessment

The teacher collects journals and uses them as an assessment. A “4” is above grade level, “3” is at grade level, “2” is working towards grade level, “1” is below grade level.

- The student has written about four body parts of the butterfly and explains what they are used for. “4”

- The student has written about three of the body parts and has explained what they are used for. “3”
- The student has written about one butterfly body part and has explained what it is used for. “2”
- The student has not written anything. “1”

Please note: Content on this page was redacted due to copyright concerns.



The butterfly's head

Two views of a butterfly's body

The butterfly emerges

La Mariposa Aparece

Lección #9 Alimentando a las Mariposas – Lección en español**EALR's**

Communication- The student uses listening and observation skills to gain understanding.

Communication C1.2 Listen and observe to gain and interpret information

Communication- The student uses communication strategies and skills to work effectively with others.

Communication C3.1 Use language to interact effectively and responsibly with others

Reading- The student understands and uses different skills and strategies to read.

Reading R1.2 Build vocabulary through reading

Reading- The student reads different materials for a variety of purposes.

Reading R3.1 Read to learn new information

Science- The student understands and uses scientific concepts and principles.

Science S1.2 Identify, describe, and categorize living things based on their characteristics

Science S1.5 Understand that interactions within and among systems cause change in matter and energy

Science- The student conducts scientific investigations to expand understanding of the natural world.

Science S2.3 Practice the principles of scientific inquiry

Science- The student uses effective communication skills and tools to build and demonstrate understanding of science.

Science S4.1 Use listening, observing, and reading skills to obtain science information

Writing- The student writes in a variety of forms for different audiences and purposes.

Writing W2.2 Write for different purposes

Writing W2.3 Write in a variety of forms

Objetivos de Contenido

- Los estudiantes serán capaces de observar como come una mariposa.
- Los estudiantes serán capaces de identificar las partes de una mariposa.
- Los estudiantes serán capaces de discutir cómo y por qué una mariposa usa su cuerpo de la manera que lo hace.

Objetivos de Lenguaje

- Los estudiantes serán capaces de usar el idioma español para interactuar en el salón de clase.
- Los estudiantes serán capaces de usar el idioma español con ayuda visual para identificar y explicar cómo usa la mariposa sus partes del cuerpo para comer.
- Los estudiantes serán capaces de usar el idioma español para obtener, procesar, construir y proveer información del tema de la materia de manera oral y escrita.

Sheltering Strategies

- Partner work: Practicing verbal interaction
- Language Experience Approach: Building on an experience to create a written account
- Modeled talk: Showing while you talk

Materiales

- Azúcar
- Agua
- Taza para medir de 1/2 taza
- 1 cucharadita para medir

- Tapaderas de frasco
- Lápiz
- Papel
- Papel para gráfica
- Esponjas

- Cucharas
- Hoja de actividad “Las mariposas necesitan comida”
- Transparencia “Dos vistas del cuerpo de la mariposa”
- Transparencia “La cabeza de la mariposa”
- Vasos de papel
- Cuadernos

Etapas previas a la lección

Hemos aprendido las diferentes partes del cuerpo de una mariposa y ahora vamos a ver exactamente como se usan. Hoy vamos a preparar la comida para nuestras mariposas, lo que nos ayudará a ver exactamente como usa las antenas, patas, alas y probóscide cuando la observemos comer la comida que vamos a preparar.

Procedimiento

- El maestro(a) comienza explicando que a las mariposas les gustan muchas diferentes clases de flores, que es un alimento natural. Así es como sobreviven en nuestro mundo.
- El néctar es lo que dan las plantas/flores y es muy dulce. La solución que vamos a hacer para alimentarlas es muy similar al néctar y va a tener un sabor dulce. Hoy

haremos esta solución, sin embargo, para alimentar a nuestras mariposas pueden traer plantas/flores reales.

- Los estudiantes están en grupos de seis. El maestro(a) dice, “En su grupo notarán que tienen un poco de azúcar, agua, una cucharadita para medir, 1/2 taza de medir, 6 piezas de esponja, 6 vasos de papel, 6 cucharas y 6 tapaderas de frasco. También notarán que yo tengo los mismos materiales en frente de mí. Juntos haremos la solución para alimentar a las mariposas.”
- El maestro(a) dice: “Quiero que cada uno de ustedes coja su vaso. Para la siguiente parte tendrán que tomar turnos. Quiero que midan 1 cucharadita de azúcar y la pongan en el vaso (el maestro(a) hace la demostración dando tiempo para que todos tengan su azúcar). A continuación quiero que agarren su taza para medir y midan 1/2 taza de agua y la vacíen en el vaso con el azúcar (el maestro(a) hace la demostración y da tiempo para que todos tengan su agua). Una vez que tengan el agua y el azúcar en el vaso, con la cuchara mezclen el agua con el azúcar. Asegúrense de mezclar bien (el maestro(a) hace la demostración y les da tiempo para que todos lo hagan). En seguida quiero que cojan la esponja y la coloquen en la solución de agua con azúcar hasta que esté completamente saturada (el maestro(a) hace la demostración y da tiempo para que todos hagan lo mismo). Una vez que su esponja esté saturada tomen la tapadera de su frasco y coloquen la esponja en ella y luego pondrán la tapadera con la esponja en el fondo de la casa nueva de la mariposa.
- (Práctica orientada) Ahora vamos a observar comer a nuestras mariposas. El maestro(a) coloca la transparencia de las partes de la cabeza de la mariposa y las 2 vistas del cuerpo de la mariposa. El maestro(a) dice: “Hemos hablado del cuerpo de

la mariposa y de cómo y porqué usa su cuerpo de la manera que lo hace. Cuando estén observando quiero que se fijen en lo siguiente:” El maestro(a) escribe esto en el pizarrón, sostiene una plástica y registra ideas en el papel para gráfica.

- Cómo se desarrolla la probóscide
 - Camina o vuela buscando comida
 - El movimiento de las antenas
 - ¿La mariposa come lo mismo que comía cuando era una oruga?
 - ¿La mariposa es un ser viviente?
- ¿Qué le hemos dado a nuestra mariposa para que pueda sobrevivir? ¿Nosotros, cómo humanos, necesitamos las mismas cosas para sobrevivir?
 - Luego los estudiantes escriben en sus cuadernos sus observaciones y discuten con sus grupos lo que observaron.
 - (Práctica independiente) El maestro(a) reparte la hoja de actividad “Las mariposas necesitan comida” y los estudiantes trabajan independientemente en ella.
 - (Revisar si el estudiante entiende) Los estudiantes trabajan en sus grupos y discuten su hoja de actividad.
 - Antes de que los estudiantes comiencen a escribir en sus cuadernos lo que han aprendido, el maestro(a) repasa lo que aprendieron en la lección.

Assessment

- The teacher will their journals and use as an assessment. A “4” is above grade level, “3” is at grade level, “2” is working towards grade level, “1” is below grade level.
- The student writes at least four things they learned and uses vocabulary appropriately.
“4”

- The student writes at least two things they have learned and uses vocabulary appropriately. “3”
 - The student writes at least one thing they have learned and uses vocabulary appropriately. “2”
 - The student writes nothing at all or what they write has nothing to do with what they have learned. “1”
-

Las mariposas necesitan comida

Hoja de Actividad

Dos Vistas del Cuerpo de La Mariposa

La Cabeza de la Mariposa

Lesson #10 The Butterfly's Body: Is it an insect? – English Lesson**EALR's**

Communication- The student uses listening and observation skills to gain understanding.

Communication C1.2 Listen and observe to gain and interpret information

Reading- The student understands and uses different skills and strategies to read.

Reading R1.2 Build vocabulary through reading

Reading- The student reads different materials for a variety of purposes.

Reading R3.1 Read to learn new information

Science- The student understands and uses scientific concepts and principles.

Science S1.2 Identify, describe, and categorize living things based on their characteristics

Science- The student conducts scientific investigations to expand understanding of the natural world.

Science S2.3 Practice the principles of scientific inquiry

Writing- The student writes in a variety of forms for different audiences and purposes.

Writing W2.2 Write for different purposes

Writing W2.3 Write in a variety of forms

Content Objectives

- Students will be able to identify a butterfly as an insect.
- Students will be able to identify characteristics that all insects share.
- Students will be able to identify other insects besides a butterfly.

Language Objectives

- The student will be able to use English to interact in the classroom.

- The student will be able to use English with the help of visuals to identify characteristics of insects.
- The student will be able to use English to obtain, process, construct, and provide subject matter information in spoken and written form.

Sheltering Strategies

- Read Aloud Plus: Using this to support understanding while teaching comprehension strategies
- Visual Scaffolding: Providing language support through visual images
- Attribute Charting: Organizing information to support understanding

Materials

- Transparency “Two views of a butterfly’s body”
- Book “What is an Insect?” by Lola M. Schaefer
- Activity sheet “Are butterflies insects?”
- Journals
- Paper
- Pencils
- Chart paper
- Transparency of an ant, bee, fly, grasshopper, ladybug, and a spider
- Book “It’s a good thing there are insects.” By Allan Fowler

Anticipatory Set

Teacher displays transparency of the 2 views of a butterfly’s body, while she reads the book, “What is an insect?” by Lola M. Schaefer. Teacher shows students the cover of the book and asks, “What do you think this story is about?” Students make

predictions on what they think the story is about. Teacher says, "Let's find out if your predictions are right by reading the story." Teacher reads story and uses read aloud plus strategy, which is stops and ask question about what is being read and summarizes the story as it is read.

Procedure

- Teacher asks, "What did we learn from our book today?" Teacher charts ideas on chart paper. Teacher gets students to mention the following by remembering what was read and using the transparency 2 views of a butterfly's body as a visual guide. (Six legs, head, thorax, abdomen, three main body parts, 2 antennae, 1 or 2 pairs of wings, insect)
- Teacher states, "From the book we have learned about insects and the certain body parts that make them an insect." Teacher asks, "Did any of the body parts mentioned in the book sound familiar to you?" Teacher using the transparency of the 2 view of a butterfly's body and the book that was read helps students discover that a butterfly is an insect.
- Teacher states, "A butterfly is an insect because it has 6 legs, the three main body parts (head, thorax, abdomen) 2 antennae, and wings."
- (Guided Practice) Teacher says, "Now that we know the characteristics of an insect let's take a look at some of the animals I have on the transparency and see if they are insects." Teacher displays one at time the transparency of an ant, a bee, a fly, a grasshopper, a ladybug, and a spider to see if they have the characteristics to be called an insect. The children also determine if it is a living thing also. Teacher uses an

attribute chart with the class. Students discover that all of these are insects except the spider.

Animals	Wings	6 legs	Antennae	head	thorax	Abdomen	Air	Food	Is it a living thing?	Is it an insect?
Butterfly										
Ladybug										
Fly										
Spider										
Ant										
Grasshopper										
Bee										

- (Independent Practice) Teacher passes out activity sheet “Are butterflies insects?” Students work independently to complete activity sheet and then pair up with a partner to discuss.
- Teacher reads book “It’s a good thing there are insects.” Teacher discusses with students and charts ideas on chart paper about how insects can be helpful to us.
- (Checking for Understanding) Teacher reviews main points taught and then students write in journals what they learned.

Assessment

The teacher will collect activity sheet, "Are butterflies insects?" and use it as an assessment. A "4" is above grade level, "3" is at grade level, "2" is working towards grade level, "1" is below grade level.

- The student has completed the activity sheet with no errors. "4"
- The student has completed the activity sheet with one or two errors. "3"
- The student has completed the activity sheet with three to four errors. "2"
- The student has not completed the activity sheet or has five or more errors. "1"

Are Butterflies Insects?

Activity Sheet

¿Las mariposas son insectos?

Hoja de Actividad

Two views of a butterfly's body

Lesson #11 Butterflies Go Free: Butterflies belong in our World – English Lesson**EALR's**

Communication- The student uses listening and observation skills to gain understanding.

Communication C1.2 Listen and observe to gain and interpret information

Communication- The student communicates ideas clearly and effectively.

Communication C2.5 Effectively use action, sound, and/or images to support presentation

Reading- The student understands and uses different skills and strategies to read.

Reading R1.2 Build vocabulary through reading

Reading- The student reads different materials for a variety of purposes.

Reading R3.2 Read to perform a task

Science- The student understands and uses scientific concepts and principles.

Science S1.5 Understand that interactions within and among systems cause change in matter and energy

Science- The student conducts scientific investigations to expand understanding of the natural world

Science S2.3 Practice the principles of scientific inquiry

Writing- The student writes in a variety of forms and different audiences and purposes.

Writing W2.2 Write for different purposes

Writing W2.3 Write in a variety of forms

Content Objectives

- Students will be able to identify how butterflies have a place in the environment.

- Students will be able to set the butterflies free knowing that they will survive even with out our care.
- Students will be able to connect through reading that butterflies are a part of our natural environment.

Language Objectives

- The student will be able to use English to interact in the classroom.
- The student will be able to use English to obtain, process, construct, and provide subject matter information in spoken and written form.
- The student will be able to use English non-verbally through action.

Sheltering Strategies

- Read Aloud Plus: Using this to support understanding while teaching comprehension strategies
- Language Experience Approach: Building on an Experience to create a written account
- Vocabulary Role Play: Building vocabulary through dramatization

Materials

- Book “Where butterflies grow” by Joanne Ryder
- Pencils
- Journals
- Chart paper
- Transparency Poem “Butterfly, Butterfly” by Author Unknown
- Butterfly cookies (optional)

Anticipatory Set

Teacher says, “We have learned a lot about butterflies. Today we will say good bye.” Teacher reads book, “Where butterflies grow” by Joanne Ryder. Teacher asks while showing the cover of the book, “What do you think this story is about?”

Procedure

- (Guided Practice) After the story is read teacher discusses with students why we need to let the butterflies go. Teacher charts ideas on chart paper. Teacher also gets students to understand that butterflies are better off in their natural environment where they have room to fly, where they can find a variety of foods, and can mate and lay eggs. Butterflies are also helpful because they pollinate flowers, provide food for birds and other animals. Butterflies are needed in our environment.
- Students go outside and observe the environment. Teacher asks students to pay close attention to the things butterflies use to survive.
- Students come back in and teacher asks, “What are some things you saw outside that will help the butterflies survive?” Teacher charts all ideas on chart paper. This will help students connect what was read in the book to what they actually saw outside.
- Students go outside with their butterflies. Teacher has student sit around their butterflies and teaches and has students recite the following poem:

Butterfly, Butterfly,

Fly Away, (students pretend to fly)

You were a caterpillar yesterday (students crawl like a caterpillar)

Butterfly, Butterfly,

You never stay,

Always fly to a new day. (students pretend to fly)

- Students release butterflies and observe them fly away.
- (Checking for Understanding) Students come back in and write in their journals any thoughts and feeling they had about releasing their butterflies. Students also write on their life cycle calendar the release date. Students enjoy butterfly cookies brought by the teacher.

Assessment

The teacher collects student journals and uses them as an assessment. A “4” is above grade level, “3” is at grade level, “2” is working towards grade level, “1” is below grade level.

- The student has written in their journals how butterflies will survive in the natural environment and why they belong in the natural environment and have expressed their feeling about releasing their butterfly. “4”
- The student has written about two out of the three things mentioned in “4”. “3”
- The student has written about one out of the three things mentioned in “4”. “2”
- The student has written nothing or what they have written has nothing to do with the lesson. “1”

Poem “Butterfly Butterfly”

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<http://www.canteach.ca/elementary/songspoems26.html>

Poema “Mariposa Mariposa”

El ciclo de vida de una mariposa

Hoja de Actividad

Activity Sheet

Lección #12 El ciclo de la Mariposa: Usando nuestro datos – Lección en español

EALR's

Communication- The student uses listening and observation skills to gain understanding.

Communication C1.2 Listen and observe to gain and interpret information

Communication C1.3 Check for understanding by asking questions and paraphrasing

Reading- The student understands and uses different skills and strategies to read.

Reading R1.2 Build vocabulary through reading

Reading- The student understands the meaning of what is read.

Reading R2.1 Comprehend important ideas and details

Reading- The student reads different materials for a variety of purposes.

Reading R3.2 Read to perform a task

Science- The student understands and uses scientific concepts and principles.

Science S1.2 Identify, describe, and categorize living things based on their characteristics

Science S1.5 Understand that interactions within and among systems cause changes in matter and energy

Science- The student uses effective communication skills and tools to build and demonstrate understanding of science.

Science S4.2 Use writing and speaking skills to organize and express science ideas

Writing- The student writes in a variety of forms for different audiences and purposes.

Writing W2.3 Write in a variety of forms

Objetivos de contenido

- Los estudiantes serán capaces de volver a contar la historia de la oruga hambrienta.
- Los estudiantes serán capaces de volver a decir el ciclo de vida de una mariposa.

- Los estudiantes serán capaces de nombrar e identificar las etapas del ciclo de vida.

Objetivos de Lenguaje

- Los estudiantes serán capaces de usar el idioma español para interactuar en el salón de clase.
- Los estudiantes serán capaces de usar el idioma español con ayuda de material visual para volver a decir el cuento de la oruga hambrienta.
- Los estudiantes serán capaces de usar el idioma español para obtener, procesar construir y proveer información del tema de la materia de manera oral y escrita.

Sheltering Strategies

- Story Reenactment: Making stories come to life
- Partner work: Practicing verbal interaction
- Visual Scaffolding: Providing language support through visual images
- Manipulative Strategies: Using objects to connect concepts
- Read Aloud Plus: Using this to support understanding while teaching comprehension strategies

Materiales

- Hoja de actividades “De oruga a mariposa”
- Tijeras
- Crayones
- Pegamento
- Tarjetas de secuencia de la oruga hambrienta
- Papel construcción
- Libro “La Oruga Hambrienta” de Eric Carle

- Dibujos del cuento “La Oruga Hambrienta”
- Transparencia “El ciclo de vida de la mariposa”

Etapa previa a la lección

El maestro(a) dice: “Hemos liberado a nuestras mariposas y hoy vamos a revisar lo que aprendimos del ciclo de vida de las mariposas. Hoy tenemos a una oruga hambrienta que nos va a ayudar a leer un libro (el maestro(a) tiene un títere de una oruga)”. “La oruga necesita ayuda para contar la historia, necesita a alguien que sea una hoja, el sol, la luna, la manzana, las peras, los ciruelos, las fresas, la naranja, el pastel de chocolate, el cono de nieve, el pepino, el queso Suizo, el salami, la paleta, el pastel de cereza, la salchicha, el panecillo, la rebanada de sandía, la crisálida y la mariposa (el maestro(a) reparte los dibujos del cuento a cada estudiante). El maestro(a) muestra la portada y dice: “¿De qué piensan que se trata esta historia?”

Procedimiento

- El maestro(a) usa el títere de la oruga para contar la historia. El maestro(a) explica que cuando esté leyendo la parte del cuento que ellos tienen, deben pararse y sostener su dibujo para que todos lo vean. El maestro(a) además también usa la estrategia de la lectura en voz alta.
- Después de leída la historia el maestro(a) pregunta, “¿Qué aprendimos de esta historia?” “¿Es esto lo que hicieron nuestras orugas?” El maestro(a) registra todas las ideas usando un diagrama de Venn para comparar lo que hicieron nuestras orugas reales y lo que hizo la oruga de la historia.
- (Práctica orientada) El maestro(a) muestra la transparencia del ciclo de vida de la mariposa. El maestro(a) dice, “La oruga de esta historia pasó por muchos cambios.

En esta historia vimos a una oruga pasar por su ciclo de vida. A esto lo llamamos metamorfosis, que es una palabra científica para explicar todos los cambios por los que pasó la oruga igual que vimos hacer a nuestras orugas reales”.

- (Práctica independiente) “Vimos en la vida real lo que le pasó a una oruga y leímos un libro sobre lo que le pasa a una oruga. Les voy a dar unas tarjetas de la secuencia de la historia que concuerdan con la historia de la oruga hambrienta y quiero que las pongan en orden de lo que recuerdan de la historia”. Los estudiantes colorean, recortan y pegan las tarjetas en papel construcción en el orden que pasó en la historia.
- (Revisar si el estudiante entiende) Los estudiantes usan las tarjetas de secuencia para volver a contar la historia a otro estudiante.
- El maestro(a) dice: “Cuando criamos a nuestras orugas observamos mucho y reunimos mucha información en nuestro calendario del ciclo de vida. Quiero que todos saquen sus calendarios del ciclo de vida porque vamos a usar esa información”.
- El maestro(a) reparte la hoja de actividades “De oruga a mariposa” los estudiantes usan los datos de su calendario del ciclo de vida para llenar la hoja de actividad.
- Los estudiantes se agrupan y discuten la hoja de actividad. El maestro(a) les pide que las comparen porque cada una es diferente.
- Los estudiantes escriben en sus cuadernos lo que aprendieron y cualquier idea o pensamiento que tengan.

Assessment

The teacher will call students one at a time and ask them to tell the butterfly's life cycle.

A "4" is above grade level, "3" is at grade level, "2" is working towards grade level, "1" is below grade level.

-
- The student is able to tell all four stages and explain what happens in each. "4"
 - The student is able to tell three stages and explain what happens in each. "3"
 - The student is able to tell one or two stages and explain what happens. "2"
 - The student is not able to tell anything. "1"

De oruga a mariposa

Hoja de Actividad

Caterpillar Sequence Cards

Teacher: Reproduce this page on tagboard for each student.

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<http://www.dltk-teach.com/books/hungrycaterpillar/sequencing.htm>

Tarjetas de Secuencia

Teacher: Reproduce this page on tagboard for each student.

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<http://www.dltk-teach.com/books/hungrycaterpillar/scquencing.htm>

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<http://www.dtk-teach.com/books/hungrycaterpillar/sequencing.htm>

El Ciclo de Vida de La Mariposa

Teacher Resources

Word Wall Vocabulary

- | | |
|--------------------------------|-----------------------------|
| • true legs/ piernas de verdad | chrysalis/ crisalida |
| • prolegs/ patas posteriores | life cycle/ ciclo de vida |
| • bristles/ cerdas | head/ cabeza |
| • spiracles/ espiraculos | thorax/ torax |
| • abdomen/ abdomen | simple eyes/ ojos simples |
| • exoskeleton/ exoesqueleto | antenna/ antena |
| • frass/ excremento | wings/ alas |
| • silk spinning/ tejiendo seda | caterpillar/ oruga |
| • molting/ mudando | butterfly/ mariposa |
| • egg/ huevo | metamorphosis/ metamorfosis |

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- Enchanted learning. <http://enchantedlearning.com>
- A to Z teacher stuff. <http://www.atozteacherstuff.com>
- DLTk's. <http://www.dltk-teach.com>
- Teachers net. <http://www.teachers.net>
- Kinderhive. <http://www.kinderhive.net>
- Kidzone. <http://www.kidzone>
- Teaching heart. <http://teachingheart.net>
- Teacher vision. <http://www.teachervision.fen.com>
- The teacher's guide. <http://www.theteachersguide.com>
- ABC teach. <http://www.abcteach.com>
- Teacher created materials. www.teachercreated.com

Science Supply Houses (which sell butterfly supplies)

- Carolina Biological Supply Call 1-800-334-5551 for a catalog.
- Dale Seymour Publications Call 1-800-872-1100 or <http://www.aw.com.dsp>.
- Delta Education Hands-on Science Call 1-800-442-5444 for a catalog.
- Educational Insights Call 1-800-933-3277 for a catalog.
- Insect Lore Call 1-800-LIVE BUG or www.insectlore.com
- The Nature Company 1-800-227-1114

- Oriental Trading Company 1-800-228-0475

Teacher books (guides)

- Thematic unit-Butterflies by Teacher Created Materials, Inc.
- Science and Technology for Children: The life cycle of butterflies teacher's guide by Smithsonian/The National Academies National Science Resource Center

- Insects Integrated thematic unit: Two versions included English and Spanish reproducible by Kingsley Publishing
- Fifty strategies for teaching English Language Learners Second Edition by Adrienne Herrell and Michael Jordan

<p>Lesson #4 Usar el idioma espanol para interactuar en el salon de clase</p>																	
<p>Usar el idioma espanol para obtener, procesar construir y proveer informacion del tema de la materia de manera oral y escrita</p>																	
<p>Demóstrar el tema de la materia por medio de la manipulacion de objetos y visualmente</p>																	
<p>Lesson #5 Use English to obtain, process, construct, and provide subject matter information in spoken and written form</p>																	
<p>Use English to interact in the classroom</p>																	
<p>Lesson #6 Usar el idioma espanol para interactuar en el salon de clase</p>																	
<p>Usar el idioma espanol para obtener, procesar construir y proveer informacion del tema de la materia de manera oral y escrita</p>																	
<p>Usar el idioma espanol para responder apropiadamente mediante el uso de imagenes visuales</p>																	
<p>Lesson #7 Usar el idioma espanol para obtener, procesar construir y proveer informacion del tema de la materia de manera oral y escrita</p>																	
<p>Usar el idioma espanol para interactuar en el salon de clase</p>																	
<p>Usar el idioma espanol a traves de ayuda visual para usar vocabulario</p>																	

CHAPTER 5

Summary, Conclusions, and Recommendations

Summary

In today's society bilingual education is a controversial issue. Bilingual education has been around for years and recent studies examine what the best practices are for bilingual education. Many factors have influenced how bilingual education has changed over the years. Some of those factors include the legislation like No Child Left Behind, the court case *Castaneda v. Pickard*, the achievement gap that has been created due to traditional second language programs that practice repetitive drills, the changing demographics for the state of Washington as well as at the local level, and how we acquire second language acquisition. All these factors demand reexamination of what and who we are teaching. Schools must provide effective, meaningful, and accessible education so second language learners can be productive members of society. Based on research of best bilingual practices and how we acquire a second language a project was created.

This project was created for a dual language program for second graders. This project has a focus in science on butterflies with the use of thematic teaching strategies, sheltering strategies, and science methodology. Some of the strategies that were incorporated to enhance student learning were cooperative learning groups, visuals, hands on, contextual cues, and using prior knowledge to build on children's understandings, just to name a few. Each lesson within the project has specific sheltering strategies that are used. The goal of this project is to provide second language learners with an effective, meaningful, and equitable education. Thematic teaching, sheltering strategies, science

methodology and dual language provide opportunities for children to gain meaningful learning, practice language, be active learners, and communicate in an environment that has low anxiety levels. Thus providing academic success in the content area to not only second language learners but all types of learners.

Conclusions

To conclude it is obvious that many studies show education in the students first language provides great academic and cognitive success in not only reading but also other content areas. Dual language programs provide opportunities of literacy instruction in the child's first language. In the content areas language can be more complex and a child may need more time and support in their first language and dual language provides support for a child's first language both academically and cognitively for as many years as possible.

Studies also show that not only the use of dual language, a bilingual education model but the use of sheltered instruction strategies, thematic teaching, and science methodology can enhance student learning. All are connected and go hand in hand in that it was found that they all incorporate similar teaching strategies and methods. Using dual language and incorporating sheltered instruction strategies, thematic teaching, and science methodology provides academic and cognitive success as well.

Recommendations

What is bilingual education and how do we acquire a second language? Throughout the process of this project I came to understand what bilingual education is and how we acquire a second language. Some may think bilingual education shouldn't exist after all we are in America and the national language spoken is English. Some have

the attitude, "Why should we teach them English when we are in Mexico they don't teach us Spanish." Some think bilingual education should be repetitive drills, in isolation, and simply translations. Some may think bilingual education is a waste of time because teaching them in Spanish only gets them further behind in English. These are ideas or thoughts have been heard and are still sadly around today in our teaching world. I realized through this project and what research has stated that these ideas or thoughts are not what is best for children learning a second language and not what bilingual education should be.

Bilingual education should provide an environment where language is acquired involuntarily, effortlessly, and naturally when facilitated with visual aids and context. Dual language is a bilingual education model that has been proven through research to be an effective model. Dual language promotes bilingualism, biliteracy and supports the research findings on language acquisition and language learning. Dual language allows children to reach high competency levels in the first language and only when that competency level is reached does the learner gain cognitive benefits. Once the first language is learned to a high competency level then skills are transferred to learn the second language. As educators sometime we assume because a child can speak a language they have the cognitive part of the language which is needed in order to succeed academically, however the language they may have is only the language they need in order to survive in our society.

Through research what I came to understand is the reality of changing demographics, the achievement gap, and the legislation No Child Left Behind that has impacted educators all around and has forced us to change our teaching beliefs and

strategies for the better of all children. State and local decision makers, and educators have had to reexamine teaching practices so that all children can be better served.

With bilingual education being such a controversial issue and there being so many different beliefs on what bilingual education should look like I recommend that one needs to start out by asking themselves, "What does research say about best practices in the area of bilingual education?" As educators we also need to consider what research says about language acquisition and language learning. It is my hope that this project will get educators off to a good start and understanding of bilingual education and how we acquire a second language. Certainly it is not the only research out there, but it will get you started. Change is never easy and for some they may never change. Change is hard especially when it may seem to be that you are the only one. Having the support of your school, district, and community will help. Change starts with one and then goes from there.

Through this project it is my hope that you will be able to take the research based strategies and use them in your classroom not only with second language learners but all learners. I suggest you start with your classroom and then take note on the changes and impacts it has on your students. As those positive changes begin to happen those around you will find out. Teachers who want to make a difference will seek to find out what is it you are doing. Another suggestion is to get out in to other schools that are doing dual language and fostering second language acquisition and see how it is impacting them. You may want to start here before experiencing it in your classroom.

I plan to one day teach in a dual language school and use this project with my classroom. The Yakima School District has some of their elementary schools that have started dual language programs. This project will also serve as knowledge that I can hope to someday present in a workshop setting, after all I currently am a bilingual resource teacher. My hope is that this project can help meet the needs of all children to enhance academic success in all areas.

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