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Culturally Responsive Math Curriculum: First Grade Dual Language Immersion Addition Unit

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CULTURALLY RESPONSIVE MATH CURRICULUM:

FIRST GRADE DUAL LANGUAGE IMMERSION ADDITION UNIT

by

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ABSTRACT

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The results of state educational testing show achievement gaps between students of color and white students in many states. This gap is also found in the testing data for school districts that implement dual language immersion using English and Spanish. Research demonstrates that curricula that incorporate theories and practices related to equity, social justice and culturally and linguistically responsive instruction can support efforts to close the gap in achievement. The purpose of this project was to create a standards-based, culturally and linguistically responsive mathematics unit of study, with a focus on social justice, to begin to close the racial achievement gap. Research on best practice for DLI, culturally responsive teaching, and math instruction and differentiation, including Cognitively Guided Instruction, was integrated. The research question explored was: *What are the components of a culturally responsive, standards-based unit on addition in a Dual Language Immersion school?* The final product was a thematic, integrated first grade unit on addition and social studies.

Topics:

Dual Language Immersion

Social Justice

TABLE OF CONTENTS

CHAPTER ONE:

Introduction

Overview

The purpose of this research is to create a culturally responsive math unit that addresses the needs of bilingual, bicultural students in Dual Language Immersion (DLI) programs. There currently exists an achievement gap between ethnic/racial subgroups in the United States. By creating culturally responsive curriculum and by becoming increasingly culturally competent, teachers can begin to close this achievement gap. In this chapter, I will explain my origins of interest in three areas: immersion education, math instruction, and equity in education. This background information will lay the groundwork for me to explore the question: *What are the components of a culturally responsive, standards-based unit on addition in a Dual Language Immersion school?*

Origins of Interest

My mission and purpose as an educator has been to contribute to social justice and equity. Throughout my life, and especially in my five years of teaching experience, I have developed three underlying passions that will be the basis for my research study. These passions include furthering the development of DLI education, designing culturally responsive, standards-based math curriculum, and making equity possible in schools with underachieving students of color. I believe that all students have the right to be successful in school. I chose to become an immersion educator in a dual language school because I believe bilingualism and biculturalism are essential in today's global society. I am an

advocate for Hispanic children growing up in the United States, and believe they have the right to develop their native language and culture while learning English. I also believe that native English speaking children have the right to be bilingual. I believe in immersion education because I think it is the best way to work toward racial equity.

In my years as a DLI educator, I have found that the traditional methods and curriculum used for math instruction are not effective for all learners. I have attempted to follow a pre-designed curriculum, and I have tried my hand at creating my own standards-based math curriculum, but in both instances I have found that the White students in my classroom outperform their Black and Hispanic peers. I have come to the conclusion that some element is missing in my instructional practices.

I believe that DLI is an outstanding model for all students to be successful, yet a racial achievement gap exists in my classroom and my school as a whole. For this reason, I feel the need to research the elements that may be missing from my school's program. I believe our attempts at using a one-size-fits-all math curriculum have been detrimental in students' success in math. I therefore want to research best practice for immersion education, culturally responsive teaching practices, and math differentiation strategies in order to create a standards-based math curriculum for bilingual first grade students in a DLI school.

Immersion education. For as long as I can remember immersion education has been an important part of my life. My first experience with immersion was when I began kindergarten at a predominately White, suburban one-way Spanish immersion school in Minnesota (MN). I attended this immersion school until fifth grade, and then continued

my Spanish language education by participating in the immersion track offered to me in middle and high school. My experiences with immersion education ignited a passion in me for Spanish language and culture, although I had few opportunities to spend time with people from the culture I studied.

In college, I decided to double major in Elementary Education and Spanish Teaching so that one day I would be able to share my love of the Spanish language and culture by becoming an immersion educator myself. I immersed myself in Spanish culture by studying abroad in Spain. I furthered my development as a Spanish language educator by working in a Spanish immersion camp during the summers. When the time came to student teach, I petitioned the administration at my university to allow me to student teach in an immersion school in a neighboring state, something that had never been allowed, and I was granted permission to do so. Upon graduating from college, I accepted a position as a first grade teacher in a two-way DLI school. Currently, I have been working as a first grade DLI teacher for five years.

Challenges of immersion education. In my five years as a DLI educator, I have witnessed the transformative nature that this type of program provides for students, but I have also encountered many obstacles that inhibit the program from being a complete success. In DLI programs, approximately half of the students are native English speakers, and half are native speakers of the target language (in my school the target language is Spanish). DLI students have the opportunity to learn two languages, English and the target language, alongside of native speakers of the language they are learning. Students are also able to have social interactions with peers from both similar and different cultural

and racial backgrounds from their own. For me, DLI programs, such as the school where I work, are excellent settings to empower students with skills to overcome the statistical probability of the racial achievement gap. However, this has not been the case for my students of color thus far.

There are many obstacles for DLI students and educators, one of the biggest being a lack of appropriate curriculum and resources to meet the needs of DLI students. Immersion curriculum should not be a mere translation of the mainstream English curriculum. There are many other considerations to keep in mind when designing immersion curriculum, including content, language, cross-cultural, cross-linguistic, and general learning objectives. In addition to curriculum considerations, DLI teachers must also take into account the diverse nature of their classrooms, and adjust instruction to meet the needs of the racial and cultural backgrounds of their students. I believe that only when both curricular and cultural needs of DLI students are met, will the achievement gap begin to close.

Math instruction and differentiation. I have taught first grade math for five years, and during that time, I have adapted my practices substantially in attempts to meet my students' needs. During my first three years of teaching, I followed the *Everyday Math* (Bell, J., Bell, M., & University of Chicago, 1990).curriculum strictly, both because I was a new teacher and because my district enforced a lesson pacing guide. However, as I began to familiarize myself with MN first grade math standards, I found that in many ways the *Everyday Math* curriculum not at all aligned to the most important standards. Following the curriculum, I felt frustrated and conflicted because I was asking my

students to learn things that were above-grade level and not developmentally appropriate, and I was not giving my students time to master necessary math skills needed for first grade. In addition, my students were not succeeding on the curriculum designed tests or achieving the state math standards.

In my third year of teaching, my principal and district leaders gave my first grade colleague and me permission to re-align the math curriculum using Understanding by Design (UbD) and the MN state math standards. The plan was to pilot our curriculum during my fourth year, and then launch a district-wide project to rewrite the curriculum for all grade levels the following year. We were given about five curriculum writing days throughout the school year to work on this project, and we were able to create a curriculum skeleton including enduring understandings, standards, content objectives, some lesson activities, and unit assessments. The following year, my fourth year, we implemented and worked to revise and complete the units. However, when the whole district administration changed in my fifth year, our project was put on pause, and we have not been given any more support to continue.

Happily, our efforts have not been in vain because we have seen great improvements in our student's achievement in math during the time we have used our own units to help students achieve mastery of state standards, and used *Everyday Math* as a supplemental resource. Although this new system has been much more effective in bringing success for students, it is not complete. I believe our units are lacking strategies for differentiation, spiral review, culturally responsive teaching strategies and activities, complete lesson development, and language objectives. I feel our newly made units help

students who are average, while students who are behind get stuck, and students who are ahead are not challenged sufficiently.

Challenges of math instruction and differentiation. One of the most fundamental parts of being a teacher is instruction. Four essential questions that teachers must ask themselves include: *What do we expect students to learn? How will we know they are learning? How will we respond when they don't learn? How will we respond if they already know it?* (DuFour, DuFour, Eaker & Many, 2010). Through my curriculum writing work, I have developed my understanding of what it is I want my first grade math students to learn, thus beginning to answer question one. I have also created new standards-based assessments that help me to answer the second question. When I arrive at questions three and four, however, I am at a loss. I do not have the tools in my tool belt to appropriately differentiate my math instruction so that my students do not fall behind, or get bored. Based on the data I have collected from grade level math tests, I have observed that students of color in my class perform lower than students who are White. Black and Brown students on average perform below grade level in math, while White students are more likely to perform at or above grade level.

This data led me to reflect on my practice as a math teacher. What am I doing (or not doing) that is causing my Brown and Black students to fall behind? How can I improve my instruction so that the language and vocabulary needs of two-language learners are met? What changes need to be made to my core instruction? How can I better differentiate instruction based on the data I collect about my student's abilities? I believe that for me to improve my math instruction and close the achievement gap in my

classroom, I need to research culturally responsive teaching practices, best practice language development for immersion education, and differentiation strategies for math. In this way, I will be able to provide all students with the skills needed to achieve high levels in math.

Equity. According to Peggy McIntosh, "Privilege exists when one group has something of value that is denied to others simply because of the groups they belong to, rather than because of anything they've done or failed to do" (as cited in Johnson, 2006, p. 21). Reflecting back on how privilege has affected my life, I can see how being White gave me many advantages as a child. I grew up in a mostly White neighborhood in an inner-ring suburb of Minneapolis. My parents, neighbors, friends, and most of my teachers were White; pretty much everywhere I looked, I saw people that looked like me. I felt safe and protected in my White community and school, and little to no attention was paid to the fact that there were almost no people of color in my surroundings. As a child, and even now, I experience privilege even when I am unaware that it is happening, which, paradoxically, is another part of being privileged (Johnson, 2006).

It would be impossible to believe that a privileged person, such as me, could go through life without forming certain beliefs about the unprivileged group. Although I was allowed not to put much thought into my privilege, the lower status of underprivileged groups could not go unnoticed. Thus, just as racial privilege was a part of my childhood, so was racial bias. "Where people live makes a huge difference in the jobs they have access to, the quality of community services, and their ability to affect those who govern them" (Johnson, 2006, p. 57). While where I lived gave me access to quality community

services, I witnessed the exact opposite geographic conditions for a black community located just six blocks from my home. My “good side of town” was clearly separated from the Black, “bad side of town” by a long and beautiful parkway. On “my side” of town, I saw homes with freshly cut lawns, parks, a high-quality hospital, and many thriving businesses, however, upon crossing the parkway to the “other side”, I remember boarded up stores, crumbling roads, vandalized walls, and sagging houses. Even as a child, it was clear to me which racial group got to live in nicer conditions.

This geographical inequity was further apparent to me in the quality of schools on each side of town. I remember my mom working at a public high school in Minneapolis located one mile from my home. As the school secretary, she would come home feeling stressed and exhausted from hours of talking with “screaming Black parents” and receiving vulgar threats ranging from physical violence to bombs. When it came time for me to go to high school, my mom simply laughed at the thought of me attending the much closer, predominantly Black populated, school where she worked, and simply said I would be attending the “better” suburban school 6 miles away. People of color were only a part of my upbringing in the sense that they were “the other”, and often the “worse” since they were not considered in a positive light in my home. This clear divide in my formative years, established a bias, and even though my parents said, “Everyone is equal, race doesn’t matter,” my experiences taught me something different.

As a child and teenager, it was easy for me to follow the path of least resistance, perpetuating the status quo, when it came to the glaring racial divide in my community. “The fact that it’s so easy for me and other people in dominant groups not to do

[anything] is the single most powerful barrier to change" (Johnson, 2006, p. 9). However, when I went to college, I began studying white privilege and noticed even more how inequalities affect both people of color and white people. When I began teaching in my racially diverse district, I participated in a two-day training called "Beyond Diversity", in which we delved deeply into matters of racial privilege and oppression. In my five years working with an equity-conscious staff and with a racially mixed student population, I have questioned the racial inequities that exist, specifically in schools. I have to challenge myself and the ingrained biases that I learned in my childhood every time I step into my classroom. My racial bias shows up in how I teach, in my learning style preference, in my socio-economic status, in my culture and experiences, in who is reflected and valued in the curriculum and in what is taught. Even though I am conscious of my bias, I am sure that it is there, just as it is ingrained in every part of our social system. Institutionalized racism impacts how I view my students and how my students view themselves, which severely limits their potential.

Racial achievement gap. I believe it is my responsibility to look closely at the privileges and resulting biases that I have experienced, and work toward creating changes in myself as an educator. The racial achievement gap that exists in schools today is a problem because race should not be a predictor of success in school. I believe students should be provided with the appropriate tools to succeed no matter their racial or cultural background. All children have a right to bilingualism and biculturalism, and the current predominant English-only ideology serves to perpetuate the racial achievement gap by

stripping Hispanic students of their inherent cultural and linguistic strengths, and starting them off at a disadvantage.

Even though my school has a very equity-conscious staff, and holds bilingualism and biculturalism as the foundation of the program, the racial achievement gap still exists. Students who are categorized by their parents as Caucasian consistently outperform students who are categorized as African American or Hispanic on math assessments. This is true despite the fact that Hispanic students are only focusing on learning math in their native language. More research is needed to change instructional practices to help close this achievement gap. I believe research on culturally responsive teaching practices and best practices for immersion education will positively impact student achievement.

Summary

Role of the researcher. As I develop my math curriculum, I will integrate research from DLI best practice, culturally responsive teaching practices, and methods to differentiate math instruction. My purpose in doing the research will be to find previously researched theories and practices that have been proven to be most effective for students of color and DLI students and meld these ideas into my curriculum. My research will not only be used in the creation of new math curriculum, but will also serve to outline a holistic teaching philosophy in regards to creating an optimal learning environment for students of color in an immersion program.

Importance of this research and the problem. The topics of immersion education, math instruction, and equity through culturally responsive instruction, are important in

education today because too many students are failing in our current educational system. DLI programs have been the most successful in helping non-native English speakers be successful, but there is a gap in the research. The missing piece needed to improve Dual Language programs involves making these programs culturally responsive. Therefore, I will research the question: *What are the components of a culturally responsive, standards-based unit on addition in a Dual Language Immersion school?* Through this research, I will design a first grade math unit that will help to close the racial achievement gap at my DLI school. The goal of this research is to combine research in best practice for immersion education, culturally responsive teaching strategies, and standards-based math instruction and differentiation in order to help me design curriculum that meets the needs of the racially and culturally diverse students in a dual language program.

In chapter two, I will provide background information about the curriculum framework, UbD, the model I plan to use to write curriculum. In addition, I will provide an overview of the racial achievement gap, specifically how it affects students in bilingual education programs. I will also review current research for the topics of DLI education, culturally responsive teaching practices, and math instruction and differentiation. In my review of DLI education I will describe the program model including the language of instruction, student population, program design, and goals. I will also describe the challenges of integrating content and language in DLI curriculum, as well as the research findings regarding the cognitive, academic, and personal benefits of DLI programs. The section discussing culturally responsive teaching will include

information about Critical Race Theory (CRT); culturally responsive teaching practices such as eliminating the deficit perspective, validating and affirming cultural and linguistic backgrounds, cooperative learning, and using social justice and activism in the curriculum. My discussion on math instruction and differentiation will focus on Cognitively Guided Instruction (CGI) methods including how to pose CGI word problems, how to elicit and interpret student thinking, and how CGI is culturally responsive. In addition, I will describe some of the Critical Learning Phases children pass through when learning mathematical concepts, and ways to differentiate math instruction such as using the math workshop model and guided math groups. Finally, chapter two will include the rationale behind why this research project is necessary.

CHAPTER TWO:

Literature Review

Introduction

This chapter has been written to provide further research and insight regarding the question: *What are the components of a culturally responsive, standards-based unit on addition in a Dual Language Immersion school?* In this chapter, background information about the UbD curriculum model, and about the racial achievement gap between students of color and students who are White will be provided. Additionally, this chapter will also explore the themes of DLI, culturally responsive teaching practices, and math instruction and differentiation. These three main themes will be connected to how to address the current racial achievement gap between students who are White and students of color in the United States.

DLI programs are designed to support the learning of all students by integrating students from diverse cultural and linguistic backgrounds, and teaching for bilingualism, biliteracy, and biculturalism. This environment is ideal for the success of both native and non-native English speakers when implemented appropriately. Research has indicated that DLI programs have successfully closed the racial achievement gap, and are the most successful at providing non-native English speakers with opportunities for high academic achievement (Baralis, 2009; Hamayan, Genesee, & Cloud, 2013; Lindholm-Leary, n.d.; Thomas & Collier, 2002).

Culturally responsive teaching practices are those that address the imbalance of power and systemic racism in the current educational system in the United States. CRT

states that teachers cannot ignore the hidden political agenda that exists in schools' official or unofficial curriculum (Yosso, 2002). Teachers of culturally and linguistically diverse populations must directly address issues of social justice in the world by integrating the issues into the curriculum. Additionally, teachers must believe their students to be capable learners, and integrate their diverse cultures and languages into the class culture to be further nurtured and constructed.

Math instruction is also inherently connected to culture, and therefore must be addressed in a culturally responsive manner (Ukpokodu, 2011). Cognitively Guided Instruction, a research-based professional development program that emphasizes teaching and learning mathematics through the use of children's natural understanding of mathematical concepts, has been shown to be a beneficial practice for all student populations because it emphasizes student construction of knowledge at their own levels (Carpenter, Fennema, Loef Franke, Levi, & Empson, 2015). Math instruction that is integrated with issues of social justice and taught in a way that allows students to use their own cultural backgrounds to build understanding is culturally responsive. By combining theory from DLI education and culturally responsive teaching into math instruction, students from all racial and cultural backgrounds will have an opportunity to experience success in school, and will ultimately help to close the racial achievement gap.

Racial Academic Achievement Gap

Definition of race and ethnicity

In order to discuss the achievement gap one must first consider the concept of difference, and the role difference plays in the discussion of

educational equity. Socially constructed differences such as race and ethnicity must be defined and discussed in order to address issues of privilege and oppression that exist in the United States (Johnson, 2006). Although the terms "race" and "ethnicity" are sometimes confused, the two words have distinct definitions (Cornell & Hartmann, 2007). Race refers to the socially constructed idea of dividing people into groups based on perceived physical differences such as skin color, eye color, and bone structure (Cornell & Hartmann, 2007; Riley, n.d.). Although race is perceived as a genetic difference, there is no scientific evidence indicating that race is a biological category, instead governments define racial categories (Cornell & Hartmann, 2007; Cosmides, Tooby & Kurzban, 2003; Riley, n.d.). In the 2010 United States Census Bureau survey, participants could select from the following race categories: White American, European American, or Middle Eastern American; Black American or African American; Native American or Alaska Native; Asian American; Native Hawaiians or Other Pacific Islander; Some other race; or Two or more races/Multiracial (United States Department of Commerce, 2010). Ethnicity, on the other hand, has less to do with physical appearance, rather this term refers to populations or groups of people who identify with each other based on a real or presumed shared ancestry (Cornell & Hartmann, 2007; Riley, n.d.). These shared connections may include cultural traits such as language or religion, but not always (Cornell & Hartmann, 2007; Riley, n.d.). The United States Census Bureau (2010) recognized two ethnic groups: Hispanic (groups of people who identify with or have connections to the Spanish language) or Latino (groups of people who identify with or have connections to Latin America) or Non-Hispanic or Latino

(United States Department of Commerce, 2010). This distinction was made because people who identify themselves as Hispanic or Latino may be of any race (United States Department of Commerce, 2010).

History of race and the educational system in the United States. Race and ethnicity are significant in education because, whether real or perceived, people treat others and are treated differently because of their perceived racial or ethnic identity (Cornell & Hartmann, 2007; Johnson, 2006). Currently, in the United States, racial inequality is imbedded in the structures of power that shape society including economics, politics, religion, family, and schools (Johnson, 2006). In the United States' educational system, there currently exists an achievement gap, meaning some sub-groups consistently reach proficiency on standardized tests, while other sub-groups do not (Darling-Hammond, 2010). The achievement gap between White students and students of color, has been a topic of much controversy and research in the United States (Darling-Hammond, 2010).

In the 1970s and 80s, after the enactment of the Elementary and Secondary Education Act of 1965, the United States worked to fund and promote equal educational opportunities in communities with high poverty and need (Darling-Hammond, 2010). During this time, the achievement gap between White students and Black and Hispanic students began to close, and the rates at which each group attended college were similar (Darling-Hammond, 2010). However, during the 1980s, federal funding for urban and rural schools was cut, and the achievement gap between white students and students of color began to grow (Darling-Hammond, 2010; Nieto, 2003). In 2005, with the passing of

the No Child Left Behind (NCLB) Act, the United States government put more pressure on schools to show adequate yearly progress based on standardized test results (Nieto, 2006). The increased push for standardization, further limited teachers selection of curriculum and pedagogical practices, resulting in negative results for students of color (Nieto, 2006). In one analysis of high-stakes testing, researchers found that in 18 states the impact of standardized testing on student learning was either indeterminate, remained at the same level it was before the enactment of NCLB, or went down with the implementation of high-stakes testing policies (Amrein & Berliner, 2002).

Racial and ethnic achievement gap in Minnesota. When analyzing standardized testing data, achievement gap between different racial and ethnic sub-groups is evident across the United States (Darling-Hammond, 2010). When analyzing data from the Minnesota Comprehensive Assessments (MCA), there is a clear achievement gap between White students and Black and Hispanic students (Minnesota Department of Education, 2015). In 2013, 65% of White students performed at a proficient level on the MCA reading test, while only 33% of Black students and 35% of Hispanic students met proficient levels (Minnesota Department of Education, 2015). Similarly, 68% of White students scored proficient on the MCA math tests, while 33% and 37% of Black and Hispanic students met the goal (Minnesota Department of Education, 2015). This gap between White students and students of color is also evident in MN graduation rates. In 2013, less than 60% of Black and Hispanic students graduated from high school, while 86% of White students did (Minnesota Department of Education, 2015).

With the widening racial academic achievement gap, a call for equity in the United States' educational system must be made. According to the Pacific Educational Group, "Equity is raising the achievement of all students while; narrowing the gaps between the highest and lowest performing students and; eliminating the racial predictability and disproportionality of which student groups occupy the highest and lowest achievement categories" (2008, p. 5). In order to change the current system of White privilege and power, a collective effort must be made to challenge the institutionalized racism that exists in schools (Pacific Educational Group, 2008). At the present, Black and Hispanic students are being denied an education of value in the current system, and one way to counteract this racial discrimination is by reexamining and changing the way they are educated. There is a growing number of bilingual education models that seek to serve Hispanic students (Hamayan et al., 2013). Bilingual education models are schools with the primary goal of achieving bilingualism and biculturalism for all students by teaching the majority of the content areas in a target language (such as Spanish), and incrementally increasing the amount of content taught in English (Hamayan et al., 2013). This educational model is one option to help address the educational achievement gap between White and Hispanic students.

The impact of bilingual education on the achievement gap. The U.S. Census Bureau has recorded a recent growth in Hispanic enrollment in schools, and projects that by 2050 the Hispanic school-age population will increase by 166%, while the rest of the population will increase by 4% (United States Department of Commerce, 2010). Given this data, the current level of neglect for Hispanic students in schools is alarming.

However, research has shown that Hispanic students who participated in bilingual education programs for at least 4 years, could develop the academic skills needed to close the racial achievement gap (Genesee, 1999). In a study conducted by Thomas and Collier (2002), English Language Learning (ELL) students who were instructed in their first language and given academic support in their second language scored higher academically on both math and reading than their peers who were taught only in English. Additionally, Moll, Amanti, and Gonzalez (1992), found that when Hispanic students in bilingual programs were able to use their own home knowledge and culture in the classroom, they were able to accelerate their academic growth (as cited in Baralis, 2009).

Dual Language Immersion

This section will describe the key components of DLI programs including language of instruction, student population, and goals; the challenges for DLI teachers and the need for rigorous integrated thematic units of study with a focus on both content and language; and the research related to the cognitive, academic, personal, and economic benefits for children who learn two languages from a young age.

Description of DLI programs.

DLI programs have been in existence in the United States for over 40 years (Howard, Christian, & Center for Research on Education, Diversity and Excellence, 2002). DLI programs, also known as two-way immersion, are a specific type of bilingual education in which students from two different linguistic and cultural backgrounds are integrated and taught core academic subjects in two languages (Howard et al., 2002). There are a variety of key characteristics that must be in place for a program to be considered DLI.

Language of instruction. The language of instruction is an essential element of a DLI program. These programs are considered additive bilingualism because students are instructed in both English and a target (non-English) language, with the goal of becoming proficient in both languages. There are two main program models for DLI, 50:50 and 90:10. In 50:50 programs, the amount of instruction time in English and in the target language is equal throughout the entire program (Hamayan, et al., 2013). In this study, the program of focus will be a 90:10 Spanish DLI school. In 90:10 programs, students begin the program with instruction in the target language (Spanish) for 90% of the day in kindergarten and first grade, with the other 10% of the day in English. Each year after, the amount of time spent in the target language decreases by 10%, while the amount of time spent in English increases, ending with a 50-50 split between the two languages by the time the students are in fifth grade (Howard, et al., 2002). In this way, the program provides an additive bilingual environment where all students have the opportunity to learn a second language, while continuing to develop their native language (Howard, et al., 2002).

Student population. Another essential component of DLI programs is the student population. Speakers of the majority language (MajL), the language spoken by the majority of people in a given regional context (English in the United States), and the minority language (MinL), a language other than the majority language in a given regional context, (Spanish in the United States) must be represented (Hamayan et al., 2013). For a program to be considered DLI, neither the MajL nor MinL group may fall below one-third of the total school population (Hamayan et al., 2013; Howard et al.,

2002). Ideally, in each classroom half of the students would speak the MajL as their first language (LI) and half of the students would speak the MinL as their L1 (Hamayan et al., 2013). Often times, there are simultaneous bilinguals, children who are taught to be bilingual since birth, enrolled in DLI programs (Wisconsin Center for Education Research, 2014). However, the majority of the students are sequential bilinguals, students who learned their L1 at home, and then acquire a second language (L2) at school (Wisconsin Center for Education Research, 2014). The two groups of students should be integrated at all times, and receive essentially the same instruction (Hamayan et al., 2013).

Program design. A final component of DLI is program design. In order for students to achieve proficiency in both languages, students should receive a minimum of four-six years of bilingual instruction (Collier & Thomas, 2004; Howard et al., 2002). The program should also include focused, standards-based instruction in all core academic areas. To be a successful program, it is necessary to have high quality teachers and administration, create a positive, welcoming school environment, and establish home-school connections (Quintanar-Sarellana, 2004).

Goals of DLI programs. According to Howard et al., there are four main goals of a DLI program (2002). The first goal is that all students will develop high levels of proficiency in their native language. This means that L1 MajL speakers will develop reading, writing, speaking and listening skills in English, and that their achievement in English will not be lessened by participating in an immersion program. Similarly, MinL speakers will develop high levels of reading, writing, speaking and listening in their L1

(Spanish), and will continue to develop their L1 while acquiring English (Howard, et al., 2002).

The second goal of DLI programs is that students will develop high levels of proficiency in a second language. This is to say that students whose L1 is the MajL will develop oral and written skills in a MinL, such as Spanish, while MinL speakers develop proficiency in English. Since both groups of students are developing two languages simultaneously, DLI programs are considered to be *additive bilingual* programs (Howard, et al., 2002). In these programs, students become bilingual and biliterate.

High academic performance for both groups of students is a third goal of DLI programs (Howard, et al., 2002). Students in DLI programs are held accountable for the same academic standards and curricula as students in English-only programs in their district. Research has indicated that students who participate in DLI programs not only meet grade level expectations, they often surpass them, outperforming peers in English-only programs (Bialystok, 2007; Collier & Thomas, 2004; Fortune & Tedick, 2003; Hamayan, et al., 2013; Howard, et al., 2002; Lindholm-Leary, 2012; Reyes & Vallone, 2007).

The fourth and final goal of DLI programs is that all students develop respect for themselves, and positive cross-cultural attitudes (Hamayan et al., 2013; Howard, et al., 2002). In addition to becoming bilingual and biliterate, students become bicultural, meaning they develop a deep appreciation and understanding of two cultures. This goal is achieved through the integration of two linguistically, racially, and culturally different

groups of students who are given the opportunity to learn about cultures different from their own by interacting with their classmates (Howard, et al., 2002).

DLI curriculum challenges. Designing curriculum that is academically rigorous, culturally authentic, and created in the target language is critical for the success of DLI programs (Hamayan et al., 2013). Determining how best to promote biliteracy in DLI programs requires further research; since state standards are meant to be used to teach students through one language, they are not necessarily ideal for teaching students through two languages (Lindholm-Leary, 2012). Even so, there are several considerations DLI educators should make when designing curriculum for their schools. Curriculum must be written strategically in order to integrate both content standards and language objectives in two languages. In addition, objectives for cross-linguistic and cross-cultural connections should also be woven into the curriculum (Hamayan et al., 2013). Since students are working to develop proficiency in two languages, these objectives should be taught using integrated, thematic units, thus ensuring that both content and linguistic connections are made (Beeman & Urow, 2013; Collier & Thomas, 2004; Hamayan et al., 2013).

Integrating content and language. In DLI programs, the focus of instruction should be on the same core academic curriculum and standards provided to peers in English-only schools (Howard et al., 2002). This is not to say that the instruction should be the same, or simply translated, only that the rigor should never be jeopardized. Content instruction should include high quality language input (the language that students hear) and give many opportunities for language output (the language that students

produce) (Howard, et al., 2002). High quality teachers for DLI programs are those that are native speakers, or have native-like proficiency in both languages of instruction; they must be able to make the language challenging, interesting, and comprehensible to both native and non-native speaking students (Howard, et al., 2002). Providing opportunities for students to practice language through cooperative learning, discovery learning, and extended dialogue is also necessary for a successful DLI curriculum (Hamayan et al., 2013; Howard, et al., 2002; Quintanar-Sarellana, 2004). Effective programs hold bilingualism as a central focus, use curriculum that provides structured time for language production, and enact procedures which enforce the use of the language of instruction in the classroom (Lindholm-Leary, 2012).

Research findings regarding the benefits of DLI programs. Research related to DLI programs has time and again shown that there are many cognitive, academic, cultural, and personal benefits for students who learn a second language from a young age (Bialystok, 2007; Collier & Thomas, 2004; Fortune & Tedick, 2003; Hamayan et al., 2013; Howard et al., 2002; Lindholm-Leary, 2012; Reyes & Vallone, 2007). MajL speaking and MinL speaking students alike benefit from being taught to be bilingual, biliterate, and bicultural. In this section, specific benefits of DLI education will be explored.

Cognitive and academic benefits. The cognitive and academic benefits of DLI programs are ample for both MinL speakers, also known as ELLs, and MajL speakers (Bialystok, 2007; Collier & Thomas, 2004; Fortune & Tedick, 2003; Hamayan et al., 2013; Howard et al., 2002; Lindholm-Leary, 2012; Reyes & Vallone, 2007; Wisconsin

Center for Education Research, 2014). Research has shown that immersion programs have been successful in closing the racial achievement gap on standardized achievement tests by the time students reach middle school, and that two-way 90:10 programs reach the highest levels of achievement in the shortest amount of time (Collier & Thomas, 2004; Fortune & Tedick, 2003; Howard et al., 2002; Lindholm-Leary, 2012). In addition, students who participate in DLI programs perform the same or better than peers in English-only programs (Fortune & Tedick, 2003). Bilingual students have also demonstrated greater non-verbal and mathematical problem solving skills; advanced executive functioning such as planning, waiting, and self-regulating; more cognitive flexibility and divergent thinking; and heightened metacognition and focus of attention (Collier & Thomas, 2004; Fortune & Tedick, 2003; Howard et al., 2002; Lindholm-Leary, 2012; Reyes & Vallone, 2007; "WIDA Focus," 2014).

Current practices of instructing ELL students in English-only settings are insufficient in helping students acquire any academic languages, and further the achievement gap by allowing MinL speaking students to lag far behind their MajL speaking peers (Collier & Thomas, 2004; Hamayan et al., 2013). However, research has indicated that MinL students perform better academically when taught in their native language, and that DLI programs have the highest success rate for ELL students in achieving academic proficiency (Collier & Thomas, 2004; Howard et at., 2002). ELL students who are instructed in a DLI program receive the cognitive advantage of fully developing their native language in a setting where this language is valued, and given privilege. In this way, ELL students are able to develop both their native language and

English (Fortune & Tedick, 2003). These learners are able to access information their learned in either language, or *translanguage,* by using "their two languages jointly to solve problems, think critically, and acquire new knowledge" (Hamayan et al., 2013, p. 32). In addition, ELL students are not left behind in these programs because they are able to access the content being taught in their native language immediately (Hamayan et al., 2013).

Similarly, MajL speakers in a DLI program have not only performed at grade level in the core content areas, they have often out-performed their peers in English-only programs (Hamayan et al., 2013). This could be due to a number of factors which allow MajL speakers to excel academically when given the opportunity to learn two languages from a young age (Hamayan et al., 2013). Since English is the MajL in the United States, native English speakers will always have an advantage, and their English abilities will not fade or diminish by learning a second language. On the contrary, the acquisition of a second language from a young age will enhance their metalinguistic abilities, give them more cognitive flexibility, and better executive functions overall (Bialystok, 2007; "WIDA Focus," 2014).

Personal benefits. Students who participate in DLI programs also experience a myriad of personal, social, and emotional benefits (Fortune & Tedick, 2003; Hamayan et al., 2013; Howard et al., 2002; Reyes & Vallone, 2007; Wisconsin Center for Education Research, 2014). Both MinL and MajL speakers in these programs develop a bicultural identity and an appreciation for cultures different from their own. Reyes and Vallone called this appreciation a "meta-cultural awareness, a heightened awareness of one's own

culture in relation to the culture of others" (2007, p. 8). For MinL speakers, this opportunity to develop a positive self-concept about their cultural identity is essential for personal success and wellness (Reyes & Vallone, 2007). Culturally and linguistically diverse students in DLI programs experience an elevated status of their native language and culture, and therefore develop a positive attitude toward their own ethnic group, high self-esteem, and overall psychological wellness (Reyes & Vallone, 2007). In contrast, in English-only settings the language and culture of MinL speakers are not given any kind of privilege. Therefore, the motivation for maintaining or nurturing their native language and culture is low. Students may even develop negative feelings toward their language, and ultimately toward themselves because they feel they are not valued (Reyes & Vallone, 2007).

Additionally, DLI programs prepare students to be global citizens and to compete in the global job market that is increasingly in need of multilingual candidates (Howard et al., 2002). Bilingualism achieved through DLI programs is a way to open doors to other cultures and reduces racism by creating environments where cross-cultural relationships are the norm, and where there is acceptance and interest in learning about the culture of others. So many cognitive, academic, social, personal, and economic opportunities are available to people who speak and know more than one language and culture; their future is full of possibilities.

Summary of DLI. DLI is a unique program model that creates a space for racial, cultural, and linguistic integration while providing students with cognitive, academic, and personal benefits. Teaching students from two cultural and linguistic backgrounds to be

bilingual and bicultural has its own set of challenges. A deep understanding of content, language, and cultural needs is necessary in order to successfully implement DLI programs; teach for biliteracy, bilingualism and biculturalism; and close the racial achievement gap.

Culturally Responsive Teaching

Teaching is fundamentally impacted by culture; who you are is what you teach (Pacific Educational Group, 2008). When teachers, curriculum, and school systems are set up by those with power and privilege (White people), then students of color are left to try to learn in a system that leaves their own culture out of the picture (Yosso, 2002). Teachers who strive to be culturally responsive must understand this power imbalance at play, and work toward shifting the status quo by validating and affirming the native cultures and languages of their students, implementing cooperative learning structures, and teaching students how to fight for social justice (Aguirre, Zavala, & Katanyoutanant, 2012; Hollie, 2012; Ladson-Billings, 1995; Lucey & Tanase, 2012; Yosso, 2002).

Critical Race Theory. CRT was developed to explain and expose the current inequalities and racist practices that exist within United States' structures and programs, including schools (Davila & DeBradley, 2010; Ladson-Billings, 1998; Yosso, 2002). CRT describes and challenges the supposedly "neutral" school structures, processes and discourses that allow for racial discrimination (Solorzano & Delgado Bernal, 2001; Yosso, 2002). When examining the education system in the United States through a CRT lens, such structures as curriculum, language and culture of instruction, standardized assessment, school funding, desegregation of programming are affected by racism

(Ladson-Billings, 1998; Yosso, 2002). CRT views these school structures "as having an unacknowledged political agenda, which is implicitly organized to privilege Whites" (Yosso, 2002, p.102). CRT centralizes race and racism in school curriculum, challenges the "dominant ideology," and empowers teachers and students to work toward social justice by exposing and questioning the current racist structures students experience in schools (Yosso, 2002).

Culturally responsive teaching practices. CRT connects well to the ideology behind culturally responsive pedagogy. According to Gloria Ladson-Billings, "Culturally relevant teaching is about questioning (and preparing students to question) the structural inequality, the racism, and the injustice that exist in society" (1995, p. 128). Culturally relevant teaching involves (1) academic rigor—believing all students are capable of academic success by eliminating the deficit perspective and viewing students as assets in the classroom; (2) cultural relevance—validating and affirming students' language and culture through the curriculum; (3) strong relationships—allowing for group collectivism through cooperative, collaborative learning practices; and (4) realness—creating curriculum that focuses on real social justice issues that affect students' lives (Aguirre et al., 2012; Hollie, 2012; Ladson-Billings, 1994; Ladson-Billings, 1995; Lucey & Tanase, 2012; Pacific Educational Group, 2008; Ukpokodu, 2011).

Eliminate the deficit perspective using culturally responsive practices. Historically, schools in the United States have systematically denied the culture and language of involuntary immigrants to the country (Hollie, 2012). Springs called this practice, which continues to this day, *deculturalization*, and defined it as, "the

educational process of destroying a people's culture and replacing it with a new culture" (as cited in Hollie, 2012, p. 28). Deculturalization, also referred to as subtractive schooling, discourages minority students to develop their native language and culture by directly or indirectly implying that these students are lacking, or unsuccessful due to their cultural and linguistic background (Hollie, 2012). An example of this occurs in many programs where ELL students are viewed as having a deficit because they do not speak English as well as their MajL speaking peers (Baralis, 2009). Similarly, in classrooms where White cultural norms are valued (such as independence, low-movement, competition, deductive reasoning, and verbal communication), teachers often fail to engage Black and Brown students (who often excel with activities that emphasize collaboration, spontaneity, high-movement, inductive reasoning, verbal overlap, and interpersonal language use), and end up labeling these students as disruptive, defiant, and deficient when they are unsuccessful (Hollie, 2012).

One element of culturally responsive teaching is replacing the deficit theory with the idea that bilingualism and biculturalism are assets in the classroom (Beeman & Urow, 2013; Hollie, 2012; Ukpokodu, 2011). Culturally responsive teachers recognize the "rich cultural capital" that students bring to the classroom and use this capital as a conduit to facilitate learning (Ukpokodu, 2011, p. 48). In culturally responsive classrooms, students are encouraged to nurture and develop their native language and culture, which are seen as part of the solution, not the problem (Beeman & Urow, 2013; Hollie, 2012). In order for Black and Brown students to experience academic success, teachers must believe their students are highly capable of being successful with rigorous, high level intellectual

challenges (Ladson-Billings, 1994; Ukpokodu, 2011). “When students are treated as competent, they are likely to demonstrate competence” (Ladson-Billings, 1994, p. 123). In addition, teachers need to know their students well in order to use instructional scaffolding to build on their skills and knowledge, and their interests to motivate their learning (Beeman & Urow, 2013; Ladson-Billings, 1995; Ukpokodu, 2011).

Validating and affirming cultural and linguistic backgrounds. In order for learning to be relevant to students, both curriculum and instruction must connect to student experiences, culture, and traditions, this requires that teachers know their students well (Beeman & Urow, 2013; Ukpokodu, 2011). According to Sharroky Hollie (2012), culturally and linguistically responsive teaching creates instructional experiences that validate and affirm students’ cultural identities. Through validation and affirmation, teachers intentionally and purposefully legitimize the native language and culture of their students, and actively work to reverse negative stereotypes related to these cultures (Hollie, 2012). In one study, Black students who participated in an affirmation exercise by spending time writing about their most important values, earned higher grades and closed the achievement gap between themselves and their White peers by forty percent (Peart, 2006). Teachers can affirm the cultural identity of students by creating a strong classroom community, drawing on their interests and abilities in class, using the student’s home language as the language of instruction, and inviting parents to the classroom to share their knowledge (Ladson-Billings, 1995).

Cooperative learning is culturally responsive. Once educators have shifted their paradigm from the cultural deficit to asset perspective, and have created a classroom

environment that validates and affirms their student's native cultures, they can begin developing culturally and linguistically responsive learning activities (Hollie, 2012). Cooperative learning is a teaching strategy in which small groups of students work together to improve their understanding of a concept. Each member of the group is responsible to learn the content themselves and to teach peers, thus creating an environment of collaboration, trust, and achievement (Balkcom & Office of Educational Research and Improvement, 1992). In traditional, mainstreamed classrooms, often times White cultural norms that are valued include independence, competition, and low-movement, quiet work time (Hollie, 2012). By contrast, culturally responsive classrooms foster interdependence, collaboration, and high movement work time with much verbal overlap through cooperative activities (Hollie, 2012). Through communal learning students are able to build trusting, respectful relationships with peers from different racial and ethnic groups, increase self-confidence, develop critical thinking skills, and improve academic achievement (Balkcom et al., 1992; Lucey & Tanase, 2012; Ukpokodu, 2011). Culturally responsive teachers can further student collaboration and achievement by allowing them to work together to think of solutions to real, current social problems (Lucey & Tanase, 2012).

Social justice and social activism are culturally responsive. Culturally responsive teachers understand that responding to their students' needs cannot just be done by adopting a few new teaching strategies; instead teachers must take action against the current social and political injustices that exist in the United States' educational system. According to Gay (2000) and Villegas and Lucas (2002), teachers need to understand that

politics play a huge role in school policies and curriculum decisions (as cited in Aguirre et al., 2012). Therefore, teachers must teach their students to develop their critical thinking so that they may critique, challenge, and take action against current social injustices in the system (Aguirre et al., 2012; Ladson-Billings, 1995; Lucey & Tanase, 2012; Ukpokodu, 2011).

Social justice and culturally responsive curriculum. Infusing social justice and activism into the curriculum is necessary throughout all content areas; however, here the focus will be on mathematics, an often overlooked content area in the realm of culturally responsive teaching. Math is not generally thought of as a content area that needs to be culturally relevant because it is just numbers (Lucey & Tanase, 2012), however, teachers must deconstruct the belief that math is universal for all cultures and understand that math is based on people's experiences and attempts to understand the world (Ukpokodu, 2011).

According to Aguirre et al. (2012), culturally relevant mathematics teaching involves four categories: children's mathematical thinking, language, culture, and social justice. Using CGI, and being open to divergent thinking with culturally and linguistically diverse students has been shown to be beneficial (Aguirre et al., 2012; Ukpokodu, 2011). CGI is a research-based program that emphasizes teaching and learning mathematics through the use of children's natural understanding of mathematical concepts. In CGI the focus is on students being able to make connections, describe and justify thinking, and see themselves as mathematical thinkers. Instead of focusing on math being right or wrong, culturally responsive teachers try to understand student thinking and problem-

solving styles in order to help them develop more effective strategies (Ukpokodu, 2011). In addition to focusing on student thinking, language and culture must also be integrated into mathematics curriculum so that students are able to access, understand, and connect with the learning (Aguirre et al., 2012; Lucey & Tanase, 2012). Using word problems that are culturally familiar, using student's native language, evaluating materials for hidden bias, and oral storytelling are some ways to integrate language and culture (Ukpokodu, 2011). Finally, issues of social justice that are relevant to the lives' of students should also be integrated into a culturally responsive math curriculum (Ukpokodu, 2011). Inequitable school resource distribution among varying socioeconomic classes, unequal wages for males and females performing the same work, and lopsided unemployment and incarceration rates among different racial groups, are just a few possible issues of social justice to address in the mathematics classroom (Ukpokodu, 2011).

Summary of culturally responsive teaching. The racial achievement gap is an issue of equity in our current educational system. Leaders who attempt to cast-off the issue as a deficit or problem with underserved students are misguided. "The problem is not who we serve but how well they are served" (Noguera, 2012, p. 12). In order to better serve Black and Brown students, teachers must adopt a culturally responsive philosophy that encompasses dismissing the deficit perspective, affirming and validating the native languages and cultures of their students, incorporating cooperative learning practices, and addressing issues of social justice in all content areas, including mathematics.

Math Instruction and Differentiation

In this section, a culturally responsive approach to mathematics teaching will be described. Combining CGI with differentiation practices can create an optimal mathematics learning environment for all students. Excellent math teachers need an understanding of CGI practices, the critical learning phases of mathematics, and how to set up Math Workshop with guided math groups.

Cognitively Guided Instruction. CGI is a research based professional development program that uses the philosophy that children must learn mathematical concepts with understanding (Carpenter et al., 2015). According to Carpenter et al., learning with understanding does not just mean learning should be meaningful, instead it means:

1. Knowledge is connected.
2. Knowledge is generative.
3. Students describe, explain and justify their mathematical thinking.
4. Students identify themselves as mathematical thinkers who see that mathematics should make sense and that they have the power to make sense of it. (2015, p. 185)

Taking into account that knowledge is connected and generative, CGI teachers work to provide children with multiple opportunities to build mathematical understanding upon the intuitive, informal knowledge they bring to school (Carpenter et al., 2015). When students begin school, they almost always arrive with basic sense-making problem solving strategies, but after a few years in school begin to abandon these strategies in favor of memorizing mechanical algorithms (Carpenter et al., 2015). This results in

problems for children because these formulas do not have any meaning, and are simply memorized steps to follow (Carpenter et al., 2015). To avoid this type of superficial learning, CGI teachers help build understanding by giving children many mathematical experiences so that they can make connections to their prior knowledge, and begin to move from concrete to abstract thinking (Carpenter et al., 2015). In CGI, children are asked to explain and justify their thinking, which helps solidify understanding, and provides teachers with insight into the child's thought processes (Carpenter et al., 2015). Finally, CGI teaches students to believe in themselves as capable mathematicians; able to problem-solve their way to understanding any mathematical concept (Carpenter et al., 2015).

Posing CGI word problems. The primary goal of CGI is for students to be able to understand number concepts and operations by connecting them to their prior knowledge (Carpenter et al., 2015). CGI teachers pose addition and subtraction word problems using a context that has meaning for students without modeling a solution strategy (Carpenter et al., 2015). There are four main addition and subtraction problem types: join, separate, compare, and part-part-whole (Carpenter et al., 2015, p. 14). Problem types and numbers used are selected strategically to help students engage in a specific mathematical goal teachers have pre-selected (Carpenter et al., 2015).

Teachers may help students comprehend the word problems by deconstructing the meaning together, but should allow students to select their own strategies for solving the problem (Carpenter et al., 2015). In the beginning, students will likely use concrete manipulatives to directly model the action or relationships posed in a problem. As their

thinking becomes more sophisticated, students will naturally move to counting strategies, and finally, with many experiences, will memorize number facts, and will use derived facts to problem solve (Carpenter et al., 2015). The progression from direct modeling, to counting, and derived facts should not be forced or directly taught, true understanding of number relationships will develop naturally, and, with more exposure to various problem types, children gradually replace direct modeling strategies with more efficient counting strategies (Carpenter et al., 2015). The process of generating increasingly more efficient and flexible problem solving strategies is defined as *relational thinking* meaning that students "explicitly or implicitly use fundamental properties of number and operations in their intuitive strategies" (Carpenter et al., 2015, p. 173).

Eliciting and interpreting student thinking with CGI. One of the primary components of CGI is for teachers to be able to elicit student thinking when solving problems (Carpenter et al., 2015). By creating a safe environment for students to share their strategies aloud, mathematical understanding is deepened as students explain their own thinking, make connections, learn from peers, and compare strategies (Carpenter et al., 2015). Teachers may ask a general question at first such as, "Can you tell me how you solved that?" (Carpenter et al., 2015, p. 140), and then may need to guide students to further articulate their thinking with more specific questions. Webb, Franke, Ing, Chan, Freund and Battey (2008) stated that, "Research shows that when students are expected to describe their strategies in detail with the teacher and with each other, they demonstrate higher mathematical achievement" (as cited in Carpenter et al., 2015, p. 140). As CGI teachers learn to listen to children's thinking, they can to use this information to drive

instructional decisions such as what kinds of problems to pose, what numbers to use, whose strategy to share, and how to support students in making connections among ideas (Carpenter et al., 2015).

CGI as a culturally responsive teaching. CGI is an inherently equitable teaching and learning philosophy because the model encourages educators to view all children as capable mathematicians, and acknowledges that all young children, no matter their race, come to school with basic problem-solving strategies upon which teachers can build (Carpenter et al., 2015). According to Gloria Ladson-Billings (1994), culturally relevant math teachers believe their students to be capable learners, celebrate success when students explain their thinking, and continually ask students, "How do you know?" Additionally, CGI teachers place emphasis on constructing meaning, not rote memorization, and scaffold instruction so that students can learn with understanding (Carpenter et al., 2015). CGI research has demonstrated that ELL students benefited both by learning mathematics and developing their language skills from needing to explain and justify their mathematical thinking (Carpenter et al., 2015).

Culturally responsive teachers use their knowledge of their students' culture, language and interests to connect learning experiences to student's lives (Aguirre et al., 2012; Gutstein & Peterson, 2006; Hollie, 2012; Ladson-Billings, 1994; Ukpokodu, 2011). Similarly, CGI teachers must take into consideration who the student is, what resources the student brings to the classroom, and how school and society influence the student's learning (Carpenter et al., 2015). Students' cultural, linguistic, and community knowledge is also be incorporated into CGI practices (Carpenter et al., 2015).

Critical learning phases of mathematics. Critical learning phases are "crucial mathematical ideas that students must understand if they are to find meaning in the mathematics they are expected to learn" (Richardson, 2012, p. xi). Each phase of learning represents a milestone in a child's developmental understanding/insights of math, not just memorization of procedures (Richardson, 2012). Early critical learning phases include: counting (one-to-one correspondence, knowing one more/one less, counting by groups); number relationships (changing one number to another, recognizing relationships between numbers); addition and subtraction (identifying parts of numbers, composing and decomposing numbers, using symbols); and place value (understanding tens as a unit, understanding the structure of tens and ones) (Richardson, 2012). When children are taught certain concepts before they have reached a certain critical phase, they will not be able to truly understand the math they are working with (Richardson, 2012). For example when children learn to add 3 + 4 = 7, they first see the three as 1 + 1 + 1 and the four as 1 + 1 + 1 + 1 (direct modeling), eventually they will recognize the three as a unit and the four as a unit and be able to count on (counting), finally they will just know that 3 and 4 equals 7 (derived facts). However, if children do not have the opportunity to pass through these stages naturally, and are asked to memorize the words "three plus four equals seven," they will not develop true understanding (Richardson, 2012).

Critical Learning Phases influence children's ability to solve word problems because they will not be able to comprehend problems with numbers that are at phases they have not yet reached (Richardson, 2012). Children who have reached the "counting objects phase" can interpret and solve single-digit addition and subtraction problems that

involve adding to, taking from, putting together, and taking apart (Richardson, 2012). However, if children are not yet able to change or compare numbers, they will have difficulty with word problems that involve changing or comparing numbers (Richardson, 2012). Additionally, in order to solve missing addend problems, children need to be able to decompose numbers (Richardson, 2012).

Differentiating mathematics. Differentiated instruction is an essential characteristic of good teaching in which teachers view students as individuals with varying needs (Kirkey, 2005; Tomlinson & McTighe, 2006). Students come to the classroom with varying biological make-ups, degrees of privilege, languages spoken, abilities, preferences, and attitudes about learning; and these differences play a huge role in how they experience school (Tomlinson & McTighe, 2006). Differentiated instruction means that teachers modify instruction so that all students are educated in a way that allows them to make meaning of content and think at high levels, despite differences (Tomlinson & McTighe, 2006).

Differentiation in math instruction is a challenge for teachers who are asked to follow a standards-based curriculum, and place emphasis on preparation for standardized math tests (Taylor-Cox, 2008). Math teachers who struggle with high stakes testing pressures and curriculum pacing guides may decide to "teach to the middle," while above and below-average students' needs go unmet (Taylor-Cox, 2008). When teachers attempt to teach math to the whole group, it is likely that the instruction will only benefit a small percentage of the class, leaving some students lost and others bored (Taylor-Cox, 2008). "Assuming that all students at the same grade level need to learn the same thing at the

same time is a problem" (Taylor-Cox, 2008, p. ix). Therefore, math teachers must have a deep understanding of the content at the level they are teaching, as well as previous and subsequent concepts so that they can teach students at the level they need (Taylor-Cox, 2008). According to guided math coach Dr. Newton, all children learn at their own pace, and have the right to learn math through their own learning style (2013). Effective math teachers should "think in threes—concept, next concept, preceding concept," and "back-map" or "forward-map" as necessary to meet student needs (Taylor-Cox, 2008, p. 3).

There are a variety of ways teachers may differentiate math instruction including differentiating the content taught, the process of how to teach it, and the product or method by which students demonstrate understanding (Kirkey, 2005). Using the Math Workshop model of instruction and Guided Math groups can make up the basis of a differentiated math classroom (Newton, 2013; Taylor-Cox, 2008)

Mathematics Workshop. Math Workshop is a teaching model that involves a teacher directed mini lesson, student work time, and a closing period for student sharing (Ensign, 2012; Newton, 2013; Taylor-Cox, 2008). The Math Workshop model allows for teachers to differentiate math instruction by using ongoing assessment to create small flexible math groups and activities that fit the various needs of the students in the class (Ensign, 2012; Newton, 2013; Taylor-Cox, 2008). There are many ways to organize a differentiated Math Workshop period; here a few methods will be described.

Newton (2013) outlined the Math Workshop model by beginning with a whole group mini lesson lasting from 10-20 minutes, in which students solve a daily word problem, learn new vocabulary, and participate in number talks and math energizers.

Afterward, students break up into small homogeneous skill-based groups and work on differentiated math centers at their own level, while the teacher works with one small group at a time (Newton, 2013). Guided math and math centers time takes up the majority of the math block, anywhere from 30-60 minutes. Finally, the class reconvenes as a whole group to briefly close the lesson and share about learning from that day (Newton, 2013).

Kobelin (2009) described another way to approach the Math Workshop model. In this method, whole group instruction is scaffolded by first teaching the whole class a mini lesson in which the teacher presents and models how to solve a problem, then the teacher asks the class to guide her to solve a similar problem, and in the third problem the teacher models common errors and asks the class to help correct her mistakes (Kobelin, 2009). After three problems, students who are ready to practice independently "go" work quietly at tables, while students who need more teacher help "stay" and work on the rug (Kobelin, 2009). As the teacher continues to guide and support students' through more problems, others may decide may they are ready to "go" and may quietly leave (Kobelin, 2009). During independent work time, students need to make choices about the materials and methods they will use when solving open-ended problems, for tiered tasks students choose the level of difficulty, and for scaffolded tasks students decide whether to work with or without teacher support (Kobelin, 2009). This procedure is repeated for a couple days until all students can do the task independently (Kobelin, 2009). As a final step, the teacher does a guided math lesson with the first group of independent students to introduce additional challenge (Kobelin, 2009).

Taylor-Cox (2008) wrote about the many essential elements of student behavior in a differentiated math classroom. These behaviors include students who are: actively engaged in problem solving using real world contexts, constructing their own understanding, using manipulatives as needed, discussing mathematical concepts (math talks), and reflecting on learning (Taylor-Cox, 2008). In addition, whole group instruction is only used to introduce new topics, give directions, create closure, and build community (Taylor-Cox, 2008). The rest of the time, teachers work with students in small, flexible groups (created using ongoing assessment), to scaffold concepts for struggling students, compact concepts to fill in small gaps in understanding, or teach the next steps for students who are ready to the next level (Taylor-Cox, 2008). Tiering, or leveling, an assignment to focus on the same concept with varying levels of difficulty, is another helpful differentiation strategy (Kobelin, 2009; Taylor-Cox, 2008).

Guided mathematics. Guided math is an instructional method in which teachers deliver instruction to students in small, guided groups with the goal of targeting learning objectives to meet students' individual needs. In order begin to differentiate math instruction, assessments of students' prior knowledge and understanding of the content must be conducted (Newton, 2013; Taylor-Cox, 2008; Tomlinson & McTighe, 2006). Possible pre-assessments can include index questions, observations, student interviews, journal entries, and personal reflection (Taylor-Cox, 2008). The standards-based pre-assessment can then be used to create strategic, purposeful, flexible and fluid guided math groups (Newton, 2013; Taylor-Cox, 2008). Information gathered with the assessment is also used to plan small-group instruction which must be targeted to meet

the individual instructional needs of students (Newton, 2013; Taylor-Cox, 2008). An important characteristic of these groups is that they are fluid and constantly changing based on on-going assessment of skills and daily learning targets (Newton, 2013; Taylor-Cox, 2008).

Before beginning to work with small groups of students, teachers need to prepare the rest of the class to be able to work independently, without interrupting guided instruction (Newton, 2013; Taylor-Cox, 2008). Teachers can scaffold instruction for independent work time by communicating clear expectations about what work time looks like, feels like, sounds like (Newton, 2013; Taylor-Cox, 2008). Some helpful mini lessons used to establish these routines include: "What does math workshop look like, feel like, and sound like?" "How do good mathematicians talk about their ideas?" "How do mathematicians show their work?" and "How do we work and play together during math centers?" (Newton, 2013). As students begin to practice independent math work, teachers can further support their success by building up work time stamina (beginning with 3 minutes, then adding a minute each day), and reflecting on progress (Taylor-Cox, 2008). This strong foundation for independent work time is essential for success with guided math groups. When students learn to work independently on math, small group time is not only given priority, but students also learn how to solve their own problems and how to support each other in their learning (Taylor-Cox, 2008).

Independent work time must be just that, work that students are able to do independently. Independent work, or math centers, should be differentiated, standards-based, and engaging (Newton, 2013). Games are an excellent way to have students

practice what they are learning, and can be differentiated by making small modifications (Taylor-Cox, 2009). Newton (2013) recommended using a combination of collaborative, competitive, and team games; as well as a variety of types of centers including practicing basic math facts, "hot topics" review, geometry, word problems, math poems, math journals and math vocabulary.

Once independent work time is in place, teachers can focus on the instruction necessary for their guided math groups. The goal of guided math groups is to help build student proficiency in mathematics by developing their accuracy, efficiency, flexibility, and fluency (Newton, 2013; Taylor-Cox, 2008). In guided math groups, teachers support the development of mathematical concepts and procedural fluency, meaning that students know both what a concept means and how to do math procedures (Newton, 2013). Students are also able to develop strategic competence and adaptive reasoning by solving problems at their level, representing their thinking, and explaining the logic behind their work to others (Newton, 2013). Teachers can act as facilitators for students to listen to one another, make connections, and ask questions (Newton, 2013). When students are able to work on appropriate, scaffolded math at their own level, they experience success, which has a positive impact on their future mathematical disposition (Newton, 2013). Students who believe themselves to be good mathematicians are more likely to take risks and try to solve problems (Newton, 2013).

Summary of mathematics instruction & differentiation. Oftentimes math instruction is overlooked when thinking of culturally relevant teaching. However, math is inherently linked to one's experiences, and thus one's culture. Cognitively Guided

Instruction allows for students to construct their own understanding of mathematical relationships, at their own level of development. Culturally responsive teachers understand that students need to feel successful with math in order to be successful with math, and provide differentiated learning opportunities while integrating student culture into the mathematics classroom.

Rationale for Research

The racial academic achievement gap persists while the number of Hispanic students in the United States grows (Darling-Hammond, 2010; United States Department of Commerce, 2010). It is imperative that this problem is addressed now. As an immersion educator, it is necessary that I address the racial academic achievement gap at my own dual language school by researching, creating, and implementing culturally responsive mathematics curriculum. By attending a DLI program, the Hispanic students in my school have the advantage of learning math in their native language beginning in Kindergarten. The intent is to decentralize White culture, while giving privilege to Spanish and Latino culture. However, a gap in achievement still exists between Brown and White students. Since my program has only existed for eight years, I believe more research related to how to successfully implement curriculum and how to best teach linguistically and culturally diverse students in a DLI program is needed for my school. A greater focus on the issues of privilege and racism could have a positive impact on student achievement at my school. CRT holds the view that the traditional school curriculum as well as the hidden curriculum are skewed to give Whites privilege over

students of color, and must be challenged by teachers in order to create change (Yosso, 2002).

I believe that adopting a Culturally and Linguistically Responsive teaching philosophy can help to make changes in the school experiences of students of color. One part of this change will include writing mathematics curriculum that allows for students to use their personal cultural and linguistic experiences to construct understanding of mathematical concepts. Another part must include the beliefs and practices that I as a teacher can adopt to create a more successful learning environment for my students. I will use my research to turn theory into practice by creating an addition math unit that is culturally responsive.

Understanding by Design

Understanding by Design (UbD) is a curriculum framework that helps teachers teach for understanding (Wiggins & McTighe, 2005). The UbD framework is designed to first identify the desired results, or learning targets of the unit. In Stage One, Desired Results, curriculum designers determine what standards will be addressed in the unit, as well as what the essential questions are, and which objectives will be met (Wiggins & McTighe, 2005). Stage One also includes statements about what students will know, understand, and be able to do by the end of the unit (Wiggins & McTighe, 2005). In Stage Two, Evidence of Learning, curriculum writers create an assessment that is aligned with the desired results, which evaluates whether or not students know, understand, and are able to do the primary objectives of the unit (Wiggins & McTighe, 2005). This stage may include multiple formative and summative assessments depending on the unit. It is

not until Stage Three, Learning Plan, that curriculum writers begin planning learning activities for the unit (Wiggins & McTighe, 2005). By planning "backwards" and developing first the objectives, and the assessments, curriculum writers can truly create meaningful learning activities that help students meet learning objectives (Wiggins & McTighe, 2005).

Summary of Literature Review

Research indicates that well-implemented DLI programs have the potential to close the racial achievement gap between White and Brown students, while at the same time providing many other cognitive and personal benefits. The issues of power, privilege, and racism in schools cannot be ignored any longer. Culturally and linguistically responsive teaching practices must be used to validate, affirm, and build upon the cultures of Latino children. Mathematical knowledge and understanding must be constructed through the lens of social justice. Cognitively Guided Instruction, when used in combination with guided math in a DLI program can provide an optimal mathematics learning environment for all students. A culturally responsive math curriculum would benefit children in DLI programs.

In chapter three, I will describe the instructional setting, participants, and methods for creating such a curriculum. An overview of the MN state standards and the unit's learning objectives will be provided. I will also outline the timeline for the completion of the project, and summarize what the end results of the project will look like.

CHAPTER THREE:

Methodology

Introduction

The purpose of this chapter is to describe the methods and rationale behind this research project. The research question that I planned to explore was*: What are the components of a culturally responsive, standards-based unit on addition in a Dual Language Immersion school?* In order to answer my research question I planned to integrate my research on best practice for DLI education, culturally responsive teaching, and math instruction and differentiation. I wanted to use UbD to write a culturally responsive, integrated math unit on addition. In my classroom and in my state, it has been the trend that White, MajL speaking students perform better in math than Hispanic, MinL speaking students. Additionally, Black native English speaking students on average do not perform as well as their White peers. The purpose of my project was to create a standards-based, culturally and linguistically responsive mathematics unit of study that would help to close the racial achievement gap in my classroom.

Intended Audience

Instructional setting. The curriculum I created will be used in a 90:10 DLI school with instruction in Spanish and English in a school with an interest in culturally responsive teaching practices and with staff that is dedicated to creating more equitable school structures and practices. This school is located in an inner-ring suburb of a large city in the United States. Students in this school begin their math education in Spanish in Kindergarten, and continue to learn math in Spanish until fifth grade. Culturally

responsive math instruction is taught during a block that lasts approximately 60 minutes. Currently, some of the teachers in this school use the *Everyday Math* curriculum, while others use teacher created, standards-based units of study.

Participants. The curriculum was designed for students of this DLI school. There are approximately 470 students in this K-5 building, 92 of which are first graders. About half of all participants are MajL speakers, while the other half are MinL speakers. While most students are sequential bilinguals, meaning they learned first their home language, and then began acquiring their second language in school; there are a few simultaneous bilinguals who learned both English and Spanish since birth. Latino students account for about 58% of the school population, while 28% of students are White, 7% are Black, 6% are biracial, and less than 1% are Asian.

The linguistic and racial representation of my classroom was similar to that of the school as a whole. The classrooms in my school are as balanced as possible, taking into consideration gender, race, language of preference, and ability level. Tables 3.1 and 3.2 describe the home languages and races of the 24 students in my class (as indicated by parents on school enrollment forms) and are representative of a typical classroom in my school.

Table 3.1 Home Languages

Table 3.1 Home Languages	**Number of Students**	**Percentage**
English	13	54%
Spanish	8	33%
Both English and Spanish	3	12.5%

Table 3.2 Race

Table 3.2 Race	**Number of Students**	**Percentage**
Latino	9	37.5%
White	9	37.5%
Black	3	12%
Biracial	3	12%

As described above, there is a racial achievement gap in math performance in my classroom. In Table 3.3 I summarize my students' performance on standards-based, teacher created math assessments for the past year. As demonstrated by Table 3.3, all White students in my classroom have achieved at high levels in number sense, algebra, and geometry and measurement, while Black, Latino and Biracial students were much less likely to reach proficiency in any area of math.

Table 3.3 Percentage of Students Scoring at a Proficient Math Level

	Table 3.3 Percentage of Students Scoring at a Proficient Math Level*				
Math Strand	**White**	**Latino**	**Black**	**Biracial**	**Total**
Number Sense	100	44	67	33	66
Algebra	100	67	67	67	71
Geometry & Measurement	100	67	75	67	75

*Proficiency was defined as scoring >80% on an assessment.

Methods

Overview. Currently, I teach math in isolation from other content area subjects. I use integrated units to teach most of the reading, writing, science and social studies

standards. For math, I use a combination of units I have created myself and *Everyday Math* curriculum. The units of study I have written, which are not fully developed, include: (1) Number Sense, (2) Number Patterns, (3) Adding within Ten, (4) Adding and Subtracting, (5) Place Value, (6) Money, (7) Geometry and Measurement, (8) Telling Time, and (9) End of Year Review. I have worked on implementing and revising these units for the last two years. For this research project, I used the skeleton of my Adding within Ten unit in order to create a fully developed, standards-based, integrated, culturally responsive unit. In this new unit, content areas were integrated including reading, writing, math and social studies. In order to write this unit, I used the backwards design (UbD) framework, beginning with the desired results, then creating assessments of learning, and finally creating a learning plan accompanied by the supplemental resources needed to follow the learning plan.

Understanding by Design process. I used the three stages of the UbD framework in order to create my unit. These stages include Stage One: Desired Results, Stage Two: Assessment Evidence, and Stage Three: Learning Plan.

In Stage One: Desired Results, I established the goals of the unit including listing MN State Content Standards, essential questions, enduring understandings, knowledge, and skills students would acquire through the unit. I first listed the Established Goals which were taken from the MN State Standards. Since the unit was integrated, math, reading, writing, and social studies standards were included. Table 3.4 lists the content standards that were addressed in my unit.

Table 3.4 MN State Content Standards

Table 3.4 Minnesota State Content Standards			
Math	**Reading**	**Writing**	**Social Studies**
1.2.2.2 Determine if equations involving addition and subtraction are true 1.1.2.2 Compose and decompose numbers up to 12 with an emphasis on making 10 1.1.2.1 Use words, pictures, objects, length-based models (connecting cubes), numerals and number lines to model and solve addition and subtraction problems in part-part-total, adding to, taking away from, and comparing situations. 1.1.2.3 Recognize the relationship between counting and addition and subtraction.	1.1.2.2 Retell stories, including key details, and demonstrate understanding of their central message or lesson. 1.1.3.3 Describe characters, settings, and major events in a story, using key details. 1.1.7.7 Use illustrations and details in a story to describe its characters, setting, or events.	1.6.3.3 Write narratives and other creative texts in which they recount two or more appropriately sequenced events, include some details regarding what happened, use temporal words to signal event order, and provide some sense of closure. 1.6.6.6 With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers.	1.4.1.1.1 Historians generally construct chronological narratives to characterize eras and explain past events and change over time. 1.4.1.2.1 Historical inquiry is a process in which multiple sources and different kinds of historical evidence are analyzed to draw conclusions about how and why things happened in the past. 1.4.2.4.1 The differences and similarities of cultures around the world are attributable to their diverse origins and histories, and interactions with other cultures throughout time.

The next step in the Desired Results Stage was identifying the essential questions, enduring understandings, knowledge and skills to be addressed in the unit. The purpose of this section was to clarify the main objectives of the unit by putting into words exactly what students would understand, know, and be able to do at the end of the unit. Table 3.5 outlines the original objectives of the unit I planned to write.

Table 3.5 Desired Results

Table 3.5 Desired Results	
Enduring Understandings	**Essential Questions**
Students will understand that… <u>Math</u> There are rules and patterns in combining and separating numbers. There are multiple ways to get to a solution. Mathematics can be used to solve problems outside of the mathematics classroom. Mathematics is built on reason and always makes sense. <u>Social Studies</u> History is made up of events from the past. History influences the present. My own personal history is unique. My experiences may be similar and different from those of others. <u>Language Arts</u> There is a central message in fictional texts. Narratives are a way of sharing about the past. Writing is a method of communicating about the past.	<u>Math</u> How does math help you solve real life problems? Is your plan working? Do you need to reconsider what you are doing? How are showing and explaining different? How do you make sense of different strategies? How do you determine their strengths and weaknesses? <u>Social Studies</u> What can I learn about myself by studying my family's past? What can I learn about others by studying history? How does the past influence the present? <u>Language Arts</u> How are messages shared through speaking, listening, reading, and writing? How are punctuation marks, grammar, and conventional spelling like highway signs and traffic signals?
Knowledge	**Skills**
Students will know that… <u>Math</u> Adding means to combine parts to make a total. There are many tools and strategies that can be used to solve math problems. Skip counting is a form of addition.	*Students will be able to…* <u>Math</u> Compose and decompose numbers with emphasis on making combinations of 10. Use various math tools to explain addition (dominoes, number lines, number grids, counters, etc.). Solve addition problems using a variety of thinking

Social Studies Each family has a different history. A timeline is a series of events that have happened. At least 3 events have happened in their own family history. Other people have different and similar experiences from themselves. People make decisions based on past experiences. Language Arts What the meaning of key details, characters, and setting are. The difference between fictional and nonfictional texts. What the parts of a personal narrative are. The steps of the writing process. The parts of a sentence (capital letter, a complete idea, and punctuation). Various temporal words.	strategies. Compose and decompose numbers fluently. Use doubles and doubles plus 1 to compose and decompose numbers. Use math to solve problems related to social justice in their own lives. Social Studies Inquire about their own history by asking their families basic historical questions. Create a timeline of events from their own life. Analyze their family history to draw conclusions about their present life. Present their family history and conclusions to peers. Listen to the presentations of peers. Compare and contrast their own personal history to that of peers. Draw conclusions about family life in their city today. Language Arts Retell key details from a fictional text. Define the words: characters, setting, and main event. Identify the characters, settings, and main events in a story. Collaborate in shared writing with peers to recount a personal narrative. Participate in the writing process: ideas, drafting, editing, revising, and publishing (with guidance and support from adults). Write a personal narrative with at least 2 appropriately sequenced events, details, temporal words, and a conclusion.

After thinking through the desired results of my unit, I planned to begin Stage Two: Assessment Evidence. In this section, the objective was to create a summative performance task or tasks for students to demonstrate whether or not they have mastered the understandings, knowledge, and skills described in Stage One. There was one summative assessment that integrated what students will have learned about social studies and language arts. This assessment involved students writing a narrative about their own family history. There was another summative assessment that integrated math and social studies learnings. This assessment involved students using math strategies to analyze and propose solutions to real life social justice issues. In Stage Two, I also included sample formative assessments that will be used to guide instruction as students' progress through the unit.

Finally, I planned to create Stage Three: Learning Plan. This section included an overview of daily lesson objectives, including daily objectives for reading, writing, math, and social studies. The plan was for the unit to last four-six weeks, so in all there would be about 20 objectives, which takes into consideration that some lessons may take more than one day to complete. The Learning Plan also included more detailed daily lesson plans. I planned to use a combination of self-created materials and *Everyday Math* curriculum materials to include in a Supplemental Resources section of the Learning Plan.

Timeline. This was an in-depth project, which required many hours of work and thought. Since I worked on this project in the summer while I am not teaching, I was able

to work full time on the curriculum. I estimated that this project would take me six weeks to complete. Table 3.6 outlines my projected timeline for project completion.

Table 3.6 Timeline

Table 3.6 Timeline		
Week	**Hours**	**Task**
July 6-12	1	Proposal meeting
	20	Begin writing curriculum
July 13-19	40	Finish writing curriculum Write chapters 4 & 5 Communicate often with advisor
July 20th	1	Send draft of Capstone Project to advisor and peer reviewers
July 20-26	20	Revise and edit as I receive feedback from advisor and peer reviewers
July 27-2	20	Revise and edit as I receive feedback from advisor and peer reviewers
August 3-9	1	Final Capstone Meeting
August 10-13	20	Make final revisions and edits
August 14th	1	Submit Capstone Project

Materials. I needed various resources to complete this project. In order to write the math section of this thematic unit I needed the UbD "Adding within ten" unit outline that I had already written. I also needed some resources from the *Everyday Math* curriculum which my school has purchased. In addition, I needed to create many resources including activities, assessments, and displays. For the reading, writing and

social studies part of this unit, I created a lot of my own materials. In addition, I needed to find books in Spanish that supported the unit theme.

End results. The end result of this six week process was a UbD framework of a four-six week, thematic, culturally responsive, integrated unit. The primary focus of this unit was addition and addition strategies, and the secondary focus was history. While addition lessons and history lessons were planned to primarily be taught separately, connections would be made between the two subjects. Reading and writing objectives supported and enhanced the themes of addition and history. The UbD included Desired Results, Assessment Evidence, and a Learning Plan including supplemental resources. This unit will be used to teach first grade bilingual students in a DLI school.

Summary

Something must be done about the racial achievement gap that persists in schools in the United States, and specifically in MN today. I began to address this problem by writing a culturally responsive unit on addition for first grade students in my DLI school. My goal was to refocus the manner in which math instruction is delivered to students in my school so that the needs of all students can be met. I used current research on best practice for Dual Language instruction, best practice for math instruction and differentiation, and culturally responsive teaching practices. The end result was an integrated unit and a teaching philosophy that can create positive change in student achievement.

CHAPTER FOUR:

Curriculum

Introduction

The objective of this study was to create a standards-based, first grade integrated unit of study on addition for bilingual students. This study focused on the research question: *What are the components of a culturally responsive, standards-based unit on addition in a Dual Language Immersion school?* This question was answered by compiling research about best practice for DLI students, as well as culturally responsive practices and math instruction and differentiation. The purpose of the study was to work towards closing the racialized achievement gap between students of color and white students at the elementary level. The unit was made with the UbD framework. In order to create this four-week UbD unit, research on DLI, culturally responsive instruction, and math instruction and differentiation, which was reviewed in chapter two, was implemented. This chapter will provide an overview of how the UbD template was used, and will serve as a guide to using the unit, which can be found in Appendix A. In addition, a rationale for curriculum choices in regards to DLI, culturally responsive instruction, and math instruction and differentiation will be discussed.

Curriculum Design Process

Curriculum design is always a process. After a unit has been written, it is necessary to implement the lessons, and in doing so, continually evaluate and revise the methods. My process for writing this unit began with writing Stage One: Desired Results, found in Appendix A. In this stage, I selected MN state standards for math, reading,

writing, and social studies. In Stage One, I also articulated the knowledge, understandings, and skills students would gain from participating in the unit. By doing this, I was able to think through *what* exactly I wanted students to take away from the unit.

Next, I determined *how* students would demonstrate their learning, and I wrote Stage Two: Assessment Evidence, which has been described in Appendix A. In order to select appropriate assessments, I again reflected on what skills I expected students to acquire which had been written in Stage One. Keeping these skills in mind, I wrote performance assessments that would allow students to demonstrate them. After writing descriptions of the math assessments, I created them so that I would know what skills would be assessed before creating Stage Three: Learning Plan. The math pre-assessment, exit slips, quizzes, social justice word problem assessment, and post-assessment can be found in Appendix F.

Finally, I began creating the Stage Three, which entailed describing in depth daily content objectives, mini lessons, independent student work, and closing lessons. The detailed lesson descriptions for each week can be found in Appendices B-E. First, I worked on the math part of the Learning Plan. I divided the essential questions over the course of four weeks, and then wrote content objectives that would break down the parts of the essential questions. I then wrote a short overview of what the goals of that week would be. After thinking through the unit in this holistic manner, I began to write daily math lessons. For this, I used mostly self-created lessons and activities, with some supplemental use of *Everyday Math* games. I included the supplemental resources needed

to teach the math portion of this unit in Appendix G. For each lesson, I followed the Math Workshop model which included a mini lesson, student work time/guided math, and lesson close.

When I was done writing the math part of the Learning Plan, I began again with the Literacy and Social Studies lessons. To write these lessons, I followed the same procedure of breaking up the essential questions over four weeks, writing content objectives, and writing weekly overviews of goals. Then, I began to write individual lessons. For this, I used a combination of self-created lessons and modifications of lessons created by *Teaching Tolerance: A project of the southern poverty law center* (n.d.). I also incorporated a variety mentor texts to use as read alouds throughout the unit. The supplemental language arts and social studies materials can be found in Appendix H.

Curriculum Evaluation

Although I have written this integrated unit, the process is not yet complete. Now, the curriculum must be implemented, evaluated, and refined. While teaching this unit for the first time, it is important that I reflect daily on what goes well, and make note of changes that were needed to further the learning of my students. In this way, the curriculum will evolve and improve. In addition, I will monitor assessment data from one year to the next. Since the goal of this curriculum writing project was to work toward closing the racial achievement gap, it is important that I monitor my assessment data. Although the group of students in my class varies greatly each year, one measure I will use will be to compare data from years prior to teaching this unit to that of after teaching

this unit. In this way, I will be able to have a general idea regarding the effectiveness of the unit.

Challenges and Solutions

The biggest challenge for me in writing this curriculum was in finding examples of how to integrate relevant issues of social justice to the math curriculum for first graders. I found a plethora of resources and previously written curricula where math and social justice were integrated for middle school and high school students. This research indicated that math should not be taught in isolation from real world issues, and emphasized that students should participate in analyzing real problems and taking action in their own communities to make change (Gustien & Peterson, 2006). This research made me wonder; What issues of social justice are appropriate for the developmental level of first graders? How can the abstract idea of equity be taught in a concrete way for young children to understand? In attempts to find others who asked the same question, I came across one article by a teacher who used children's literature and children's experiences to teach about issues of scarcity and poverty through mathematics (Murphy, 2009). This inspired me to find more examples of children's literature and real world examples that could be used to teach about social justice at the primary level.

In this phase of my research I found two organizations dedicated to teaching about social justice, which I had not expected to use at the beginning of the project. The first, *Using their Words*, showcased the work of Dr. Picower, a professor whose research focused on developing teacher activists, and bringing equity and social justice to urban classrooms (2012). Picower (2012) wrote a book entitled, *Six Elements of Social Justice*

Curriculum Design for Elementary Education. These elements include: self-love and knowledge, respect for others, issues of social injustice, social movements and social change, awareness raising, and social action. I used the first three elements as a basis for my curriculum, and touched lightly on the last three elements. This organization also has compiled a large list of children's literature that can be used to teach about issues of equity and justice. This source was helpful to me to begin to gather literature to use in my unit; however, an additional challenge I faced was finding Spanish translations of the titles I wanted to use.

The second organization, *Teaching Tolerance: A project of the southern poverty law center* (n.d.), houses a myriad of professional development tools for teachers who are interested in teaching about social justice. This source helped me to incorporate real world examples of equity issues into my curriculum. I found that this source incorporated the ideas of Picower (2012) and had many activities designed to teach children about self-love and respect for others.

Understanding by Design Stage Three: Learning Plan

Weekly lesson guide example. Table 4.1 provides an example of the learning plan overview for a week of the unit. On the left-hand side there is a description of the math objectives for the week, and on the right-hand side there is a description of the social studies and language arts objectives for the week.

Table 4.1 Example of Weekly Overview

Math	**Social Studies & Language Arts**
Overview: This week students will explore the concept of adding 0, 1, or 2 through the use of story problems and a variety of math manipulatives.	**Overview**: This week students will interview family members about their own personal history. Students will create a timeline of at least 3 events from their lives.

Students will make connections between math at school and math at home. The focus standard this week is to recognize the relationship between counting and addition. Students will learn how to explain their mathematical thinking. **Essential Question**: How are showing and explaining different? **Vocabulary**: sumar, más, en total, igual a, parte-parte-total, tablas de 5, tablas de 10, dominó, cubos, recta numérica, cuadrícula de números, fichas **Centers:** *Story mat problem solving* *Tirar hasta 5/10/20* *Llegar al 50* *Salta del conejito*	The focus standard this week is *historians generally construct chronological narratives to characterize eras and explain past events (1.4.1.1.1)*. Students will learn about their own personal identities. **Essential Question**: What can I learn about myself by studying my family's past? **Vocabulary**: historia, el pasado, línea de cronología, narrativa, personaje, ambiente, evento principal **Read alouds:** *Estoy orgullosa de mi pasado* (Amy White) *Quienquiera que seas* (Mem Fox) *I look like a girl* (Sheila Hamanaka) *Todos los colores de nuestra piel* (Katie Kissinger) *The Skin I'm in* (Lesley Harker) ***Books in English** will have to be translated prior to reading if a Spanish translation is not available. ***Prior to beginning the unit:** Send home the family Questionnaire in both English and Spanish about two weeks before beginning the unit. Students should complete the questionnaire as homework and return it to school.

The weekly overview is meant to give the teacher the big ideas on which to focus for the week. It includes a short paragraph describing what students will be learning that week, the essential questions on which to focus, and key vocabulary words to teach. For math the weekly overview includes a list of math centers that need to be prepared in advance. For reading, a list of read aloud books is provided in Appendix H.

Daily lesson guide example. Table 4.2 provides an example of how the daily lesson plans are organized. Again, the math lesson plans are located on the left side and the social studies and language arts lesson plans are located on the right side. The daily

lesson plans for all subjects begin with content objectives (CO) for the day. The lessons in this unit follow a clear structure so that they are both instructionally sound and predicable for students. For all subjects the general format is the following: whole group mini lesson, student work time, whole group close and assessment.

Table 4.2 Example of Daily Lesson Plans

DAY 2	
CO: I can tell why math helps me in my day to day life. **CO:** I can combine two parts to make a total. **Whole group** **Introduce** the big idea (content objectives) and post them on an anchor chart **Make connections:** Ask students to make connections between math and their day-to-day lives. When do you use math at home? When do you use math at school? Students will turn and talk to a partner (T&T) about their experiences. Students will then draw/write their connections on an index card. **Card Exchange Activity:** Create one inner and one outer circle so that pairs of students are facing one another. Inner circle students will share the connection they drew with their partner using the sentence frame, "*Yo uso matemáticas cuando* _____." Then the outer circle student will share their connection. Partners will trade index cards. The outer circle will rotate one person to the right. New partners will share the connection drawn by previous partner using the sentence frame, "*Mi compa usa matemáticas cuando* _____." Continue sharing as appropriate. **Close** Tape student connections to anchor chart and review common themes that emerged. **Independent work** Students will select a math center taught in previous unit for review and practice.	**CO**: I can create a timeline of events from of my life. **CO:** I can listen to others with respect. **Reader's Workshop** **Mini Lesson:** Read aloud: *Quienquiera que seas* (Mem Fox) Ask students what they like about the book. I would also tell the students to look around the room at all their classmates and they tell them that everyone may look different but everyone has love on the inside. I would present them with two colored eggs. One will be a white egg and the other will be a brown egg. I would crack each egg in front of them, then show them that the eggs represents them and even though the eggs look different on the outside but when I cracked them they are just alike in the inside. Ask students if they have ever been treated or treated someone else differently because of the way they looked. Have a conversation about what it means to treat others with respect, refer back to chart about how to listen with respect from day 1. **Independent reading/Guided reading/Lit centers** **Writer's Workshop** **Mini Lesson:** Explore a variety of timelines that will activate student's prior knowledge about what a timeline is (class trips, student's birthdays, daily schedule, etc.) Model making a timeline of teacher's life using some of the events listed on chart from day 1. At the beginning of the timeline write, "I was born.9/22/1986" At the end of the end of the timeline write, "I studied history in first grade. Date" Tell students that any other events must be place

Assessment Use data from pre-assessment to guide instructional choices for the beginning of the unit. Also, use this assessment to create preliminary guided math groups based on areas of need.	somewhere in-between these two. Add 2 or 3 other events to my timeline. Draw pictures for each event. **Student Writing:** Students will write and draw their own personal history timelines with at least 3 events. **Close Reader's & Writer's Workshop:** Partners will share their timelines with one another.

Teacher Guide for Daily Instruction

Daily schedule. The schedule each day follows a predictable routine for each workshop period including a whole-group mini lesson, student worktime, guided instruction, and a whole group closing. The amount of time spent on each part of the routine will vary from school to school, depending on the school's schedule. However, the general guidelines for this unit are to spend about 10-15 minutes on whole group mini lessons, 30-60 minutes on worktime/guided instruction, and 5-10 minutes for whole group closings. The amount of time spent in whole group may increase if there are activities where students stand-up, move, and interact with peers within the lesson. Ultimately, teachers need to decide what is best for their own students depending on student engagement and time available. Lessons may take more than a day if students need more time to complete an activity or to practice a new skill. Teachers should make these decisions based on formative assessments and teacher observations.

Forming cooperative pairs or groups. Student groupings or pairs should be flexible and variable. Students should have the opportunity to work independently, with partners and with groups on a regular basis. Sometimes pairings or groupings are heterogeneous, and sometimes they may be homogeneous based on student ability. An

example of when a homogeneous pairing would be appropriate is when students are working on a tiered activity with different levels of difficulty. In this case, students would work with other students on the level of difficulty most appropriate for them. Heterogeneous groups are appropriate when doing group projects or games that are not tiered. Additionally, be conscious of grouping children who are different together. For example, make sure students get the opportunity to work with students of a different gender, race, ethnicity, and language of preference. Student choice may also occasionally be a part of forming pairs or groups, but be cautious of leaving children out.

How to set-up guided math. In order to implement guided instruction with students, clear expectations and predictable routines must be established ahead of time. The first step in setting up the routine is to teach students the daily schedule of Math Workshop. For this unit, the schedule is: Problem of the Day, Mini Lesson, Student Worktime and Guided Math, and Closing. Second, teach students the behaviors expected of them during student worktime. It will be impossible to conduct guided math groups if students do not know how to work independently. Therefore, it is critical to teach, practice, and review how to work independently ahead of time. Create role play, do fishbowl activities, and make anchor charts to teach and remind students of worktime expectations. Some topics to discuss include:

-What does it look like, sound like, and feel like to work together on a math center?

-What are students doing? What is the teacher doing?

-How do we start a game? What should we do while playing?

-What should we do if we disagree? How can we solve a problem?

-How do we transition to/out of worktime?

It is important that students learn they are capable of solving their own problems. When students are empowered to solve their own problems, it not only allows the teacher to spend more time instructing, but teaches students how to stand up for themselves and listen to others.

Finally, set up guided math groups that are flexible and based on formative assessments. When grouping students, think about what the objective of the lesson is, and select students based on their needs related to that particular objective. Then, target the intervention to the needs of the students in the group. Guided math groups should change regularly, and children should work within a variety of groupings on a regular basis. Use a variety of assessment methods to determine the needs of students.

Rationale for Curricular Choices

Dual Language Immersion. DLI teachers must consider a variety of factors when creating curriculum for their students. Thematic integrated units of study are those in which multiple content areas are taught at the same time, connected by an overarching theme (Hamayan et al., 2013). Thematic integrated units are best for immersion programs because content and language can be taught simultaneously while cross-disciplinary connections can increase the depth of student understanding (Hamayan et al., 2013).

The unit written for this study is a thematic integrated unit because it linked MN state history, writing, reading, and math standards, using the theme of *identity*. As students learn about their own personal histories, including the characteristics that make

them who they are, they simultaneously learn about the concept of addition, how to write personal narratives, and how to retell narratives. The theme of identity was extended to numbers by discussing how, like people, numbers are made up of different components which makes their numerical identity. Understanding that numbers can be composed of other numbers is an important part of understanding addition. At the same time, students write personal narratives about their identities and practice reading and retelling fiction and nonfiction stories about the lives of other people.

Culturally Relevant Teaching. CRT holds the view that the issue of institutionalized racism in schools should not be ignored by teacher (Yosso, 2002). Through culturally relevant teaching practices, teachers can expose and challenge the current hidden and overt racism that exists in curriculum and school structures (Yosso, 2002). CRT curriculum includes keeping race and racism in the forefront of the curriculum, challenging the status quo, using culture as assets in the classroom, and integrating interdisciplinary units of study (Yosso, 2002). Belief in students, affirmation of culture, cooperative learning, and integrating issues of social justice are elements that were included in this culturally responsive, interdisciplinary first grade math unit on addition in order to work toward a more equitable school experience for all students.

Culturally responsive teaching and belief and affirmation. In order for students to succeed academically, teachers must demonstrate belief in their students as capable of excellence, as well as affirm students in their cultural identity. Belief is an aspect of teaching that is difficult to quantify or write in a curriculum framework, however, it can lay the groundwork for student achievement. Belief in student ability is something a

teacher must exude in her actions and attitudes. Teachers who believe in their students have a growth mindset, and scaffold learning to meet the needs of their students. Growth-oriented teachers do not think of students as deficient, low, or lacking language, instead they see their students as culturally and linguistically rich assets in the classroom. By nurturing Latino students' home language and culture, such as is the goal in DLI programs, these students are able to build upon their pre-existing knowledge. Spanish DLI programs are an excellent setting for Latino students to feel affirmed and validated because the program goals include additive bilingualism for all students. Within the DLI context, teachers must also create strong, respectful classroom communities and allow for students to construct their own identities by having conversations about race, culture, and language as it relates to them. In the integrated unit created for this study, these kinds of conversations are woven into many lessons, while at the same time students are learning grade-level, standards-based content.

Culturally responsive teaching and cooperative learning activities. In the unit created for this study, there was an emphasis placed on cooperative learning. A learning environment that encourages cooperation and interdependence (instead of competition and individualism) helps to build community and develop critical thinking skills (Hollie, 2012). In this unit, the goal was to include a variety of open-ended projects and games where students must work together to solve math problems. I also included some collaborative projects where students demonstrate their understanding of a topic by jointly creating something that represents their learning.

Culturally responsive teaching and integrating social justice into the curriculum. Culturally responsive teachers integrate issues of social justice into the curriculum instead of ignoring them. At the first grade level, students can begin to learn about social justice by cultivating self-love and knowledge (Picower, 2012). By learning about their own histories, students create a sense of dignity in their culture, heritage, race, religion, skin tone, and gender (Picower, 2012). Through the process of learning and sharing about oneself, first graders also can begin to learn about and respect classmates. In doing so, a climate of respect for others is created through students learning to listen with kindness and empathy to the experiences of their peers (Picower, 2012). In this unit, a celebration of diversity and a cultivation of mutual respect has been integrated by helping students to learn and share about their own families and cultures.

Next, teachers can transition from a celebration of diversity to an exploration of how diversity has and does impact various groups of people (Picower, 2012). First graders can begin to learn about issues of equity by analyzing and critiquing unjust or unfair situations that are relevant to their lives (Picower, 2012). Children's literature can provide excellent contexts for issues of justice with which students can connect (Picower, 2012). In this unit, there are a variety of excellent mentor texts that help introduce issues of equity to young children. In addition, students are challenged to analyze and reflect about issues of fairness that affect them regularly.

Cognitively Guided Math Instruction. CGI methods will form the basis of the math instruction in this unit on addition. Since CGI emphasizes allowing students to construct their own knowledge, the primary goal was to establish a learning environment

where this was possible. To do this, emphasis was placed on process and strategy instead of only the "right answer." Discussions were facilitated so that students were able to share and listen to strategies for problem solving. These strategies primarily came from students, and were not be modeled by the teacher, so that students could use the strategy that made the most sense for them instead of trying to memorize a procedure.

Another goal for this unit was to include culture and social justice themes in the contexts of story problems being solved. Although specific story problems have been written already for the unit, the idea is that story problems be inspired by the students themselves. For example, stories shared about student histories and personal identities during the language arts block of time, should be integrated into word problems solved during math time. For instance, when students share about favorite foods, traditions, or hobbies, these would be written into story problems. Instead of posing the problem, "Suzi had 4 cookies and Jack gave her 5 more cookies. How many cookies does Suzi have now?," the problem could be written as, "Luis had 4 *empanadas* and Carmen gave him 5 more. How many *empanadas* does Luis have now?" In this example, a traditional food was used, as well as names of students in the class.

Story problems can be taken to another level by story problems addressing real life social issues students faced, instead of inventing a scenario. For example, "Twelve students from our class want to sit together at the same table. There are six chairs at the table. How many students will need to sit somewhere else? How can the group decide how to split themselves up?" At the end of the unit, students moved on to writing their own problems that need solving, and shared these with the class.

Awareness of Critical Learning Phases. The Critical Learning Phases are important to keep in mind as teachers assess students and plan instruction throughout the unit. These phases helped to better understand a student's thinking when selecting a strategy to solve a problem. Knowing where a child is at in his/her development helps to differentiate problem types and level of difficulty. This differentiation allows children to learn just above their independent level so that they continue to grow and progress.

Differentiated math instruction. In differentiated classrooms, teachers can use the same UbD objectives and criteria for meeting the objectives for all students (Tomlinson & McTighe, 2006). The goal is that all students, no matter their needs, will understand, know, and be able to do certain things by the end of a unit (Tomlinson & McTighe, 2006). However, the manner in which students demonstrate their understanding and knowledge can vary. For example, some students may perform better orally, and some may prefer writing. As long as the primary objectives for the unit are met, the type of performance can be differentiated. Similarly, the manner in which students arrive at learning goals should be differentiated.

In addition to using differentiated assessments, this unit also incorporates differentiated teaching methods such as flexible guided math groups, scaffolded work, and tiered activities. Guided math groups were created based on student need as observed in formative assessments. The groups were flexible based on the learning objective of the lesson. Students who work with the teacher in small groups were supported to learn at their own level. Students working independently worked on tiered activities to meet the

same goal, but at different levels. Student choice also played a role in the differentiation of the unit.

Summary

The goal of this integrated, standards-based first grade unit on addition is to begin to close the racial achievement gap at the primary level between bilingual students of color and white students. In order to do this, research on best practice for DLI, culturally responsive teaching methods, and math instruction and differentiation was integrated. Throughout this thematic unit related to identity of self and numbers, students begin to deepen their understanding of their personal identities and learn to respect those of others. In addition, students learn how to add, how to select an appropriate strategy for solving problems, and connect their mathematical understanding to real life issues of justice.

CHAPTER FIVE:

Conclusion

Introduction

In this study, I explored the research question: *What are the components of a culturally responsive, standards-based unit on addition in a Dual Language Immersion school?* I did this because there is currently an achievement gap between students of color and White students in Minnesota. I knew that DLI programs were ideal settings for Hispanic students to be successful in school (Hamayan et. al, 2013), but I noticed the racial achievement gap in math persisted in the school where I work. I wondered what component could be missing from my school that was inhibiting students of color from being successful. I decided to research best practice for teaching bilingual students in DLI programs, culturally responsive teaching practices, and best practices for math instruction and differentiation. Through this research I found that both teacher development and curriculum development were areas in which my school needed more support. This project is just the beginning of the journey to educational equity: there are still many challenges to face, and further research needed, but it is a step in the right direction.

Teacher and Curriculum Development

The most important piece I took away from my research is that culturally responsive teaching is not a curriculum. Even though this project focused on writing curriculum, the curriculum alone is not enough to be culturally responsive. What is really needed is teachers who are committed to learning about themselves, willing to challenge their own beliefs about education, and dedicated to making change happen. No one can

provide you with a "grab bag" of tricks to become a culturally responsive teacher. Being a culturally responsive teacher means continually analyzing your own beliefs and ideas about race, gender, sexuality, and other differences. Every individual must continue her own journey of constructing her own racial and cultural identity, and how her beliefs impact classroom practices. At no point is the journey over; it is a lifelong learning process.

When it comes to answering my research question—*What are the components of a culturally responsive curriculum?*—I can list many aspects of being culturally responsive, including belief and affirmation of students' cultural identity, elimination of the deficit perspective, cooperative learning activities, and a focus on social justice. However, these components could be used to modify almost any curriculum. Teachers who have spent time reflecting about issues of power, privilege and difference, can analyze curriculum for hidden bias, and incorporate materials that introduce students to diverse perspectives and stimulate conversations on equity in today's society.

Culturally responsive teachers know it is not just *what* is taught, but also *how* it is taught. An aspect of White privilege includes the idea that White people do not need to think about or even be aware of social injustices; this obliviousness is part of the privilege (Johnson, 2006). Non-culturally responsive teachers could, for example, teach addition to DLI students without once thinking of or addressing the imbalance of privilege that exists between students of color and White students in the classroom. Their real life word problem examples may reflect the privileges experienced by White culture, and not resonate with students of color. However, a culturally responsive teacher would

directly address and think about how privilege impacts students' lives, and actively work to bring injustices to light and make social changes.

Additionally, culturally responsive teachers believe students are capable, intelligent, and hard-working no matter the circumstances of their lives. They believe each student comes to school with a wealth of knowledge and resources upon which to build. They enact practices to continually reinforce this belief about students in the classroom. High expectations, effort-based compliments, growth mindset, scaffolding activities, and cooperative learning are some of the things culturally responsive teachers do to let students know they are capable learners.

Limitations of the Curriculum

Every class culture is different and teaching must be customized to the culture of the population of students being taught. Since curriculum can never be "one size fits all", what is relevant to one group of students may not be relevant to another. This curriculum was designed specifically for Black, Latino, and White bilingual students in a Spanish DLI program. The connections and real world examples reflect issues that these specific students face regularly. Each year, teachers should reflect on their current group of students and select lessons that meet the needs of those specific students. The curriculum could be transferrable to other classes, schools, or types of programs. However, the books, math word problems, and other real life examples would need to be modified to meet the needs of the culture of the students in the class it is taught.

Another limitation is that this unit is just one unit for the whole school year. When designing curriculum it is important to think through the scope and sequence of all the

units taught throughout the year. Some units for math may connect well with science or social studies themes, while others may be more difficult to integrate. The next steps for this project would be to determine which units of study to integrate, when to teach each unit, and finally writing all of the integrated units of the year. This project may take years to complete, but in the end, the result will be worth the extra work.

Recommendations to Others

Teachers who are ready to take a step toward more equitable, culturally responsive practices, should also be ready to face some challengers who are not yet comfortable with changes to the current system. It is important to educate yourself on the current research for best practice in DLI programs, best practice for students of color, and best practice for the content area you are teaching. In this way, when someone asks why you teach the way you do, you will have research-based examples to support your methods. Using culturally responsive curriculum is a challenge to the status quo; it may be difficult to implement because talking about race and difference can make some feel uncomfortable. As a DLI and culturally responsive educator, part of your job is to be an advocate for those who have less power, and less voice. While parents, administrators, and other teachers may be hesitant to introduce such a curriculum or may have trouble adopting a culturally responsive mindset, continue to advocate for the needs of your students of color, despite what others may say.

Social Change and Policy Change

The idea that race is a taboo topic needs to dissipate in order for progress to be made (Johnson, 2006). It is not appropriate to continue saying we are "multicultural" or

"we don't see color" and expect children to learn how to treat others who are different from them. The fact is, there are differences in the world, and social attitudes and policies have favored some differences over others. In order for change to be made, we as teachers must teach change, we must teach children about who they are, how to respect and love others, about injustices that exist in society, and how to create change. But how can teachers learn to be agents of change, if they are not taught? Policies for pre-service teacher licensure programs must be modified to include coursework related to teaching for equity. Professional development, such as *Beyond Diversity* (Pacific Educational Group), for practicing teachers must be widespread so that current teachers can implement new practices and develop new teaching philosophies as well. These ideas are just the tip of the iceberg when it comes to political change for educational equity. Change begins with individuals who seek it, it begins with teacher leaders; it begins, only when a teacher assumes full responsibility for what becomes of her students.

Further Research

More research about how to incorporate social justice in primary years is needed. Students do not need to wait until adolescence to become activists in their community. While older students are ready to study more abstract topics like poverty, incarceration rates, access to potable water, labor laws, wages, housing, and school funding, younger students can begin to learn about themselves and others in a more concrete way. Research related to what young children can learn to prepare them for the abstract topics of injustice at an older age would be helpful for primary teachers. What issues of justice are developmentally appropriate for five-eight year olds? How can young children be social

activists? This age group definitely understands, and is preoccupied with justice and fairness, especially as it relates to their own lives. First graders may not be ready to understand the complete history of racial injustice, but they are ready to solve problems and learn about others.

Plan for Communicating Results

The work that has been done here would be in vain if it were not shared with others for the benefit of students. Therefore, I will not only use this project to better my own teaching practice, but I will share my work with others who are interested in learning about teaching for social justice. I will begin this by sharing this unit with my grade-level team at my school, in hopes to implement the unit together. Then, I will collaborate with my team to write other similar integrated units of study with a focus on equity. I will also share my work with my principal, and let her know that I am willing to lead professional development related to culturally responsive teaching and curriculum writing. If other teachers are interested in my study and want to learn about teaching for equity, I will gladly meet with them to share my learning. If and when I am invited to be a guest speaker for pre-service teachers, I will share my learnings with them as well. In addition, I will continue to advocate for students of color, additive bilingualism, and teaching for social justice. I will continue to research and learn to keep myself informed. I am passionate about equity for students of color, and for this reason I will continue to seek out opportunities to advocate for their needs.

Summary

Through this process of research and curriculum writing, I have learned about race and achievement, DLI programming, culturally responsive teaching, and math instruction and differentiation. I have learned how to implement best practice in all of these areas into my own teaching repertoire. Due to this research, I feel more comfortable talking about race and equity with colleagues, parents and administrators. When I am asked about these topics, I am ready to provide research supported answers and continue to advocate for my students of color. Although this project focused on one unit of study, for one grade level, at one program; the principles I learned through this research can be applied to any unit, for any grade level, at any school. I will continue to nurture my passion for bilingual education and social justice, and share my knowledge with others.

APPENDIX A

UNDERSTANDING BY DESIGN FRAMEWORK

Understanding by Design Framework

STAGE ONE: DESIRED RESULTS

Established Goals:

- Students will be able to use a variety of problem solving strategies to combine numbers and solve word problems.
- Students will be able to discuss and write about their personal history as well as make connections between their past and their present.

Minnesota State Content Standards:

Math	Reading	Writing	Social Studies
1.2.2.2 Determine if equations involving addition and subtraction are true 1.1.2.2 Compose and decompose numbers up to 12 with an emphasis on making 10 1.1.2.1 Use words, pictures, objects, length-based models (connecting cubes), numerals and number lines to model and solve addition and subtraction problems in part-part-total, adding to, taking away from, and comparing situations. 1.1.2.3 Recognize the relationship between counting and addition and subtraction.	1.1.2.2 Retell stories, including key details, and demonstrate understanding of their central message or lesson. 1.1.3.3 Describe characters, settings, and major events in a story, using key details. 1.1.7.7 Use illustrations and details in a story to describe its characters, setting, or events.	1.6.3.3 Write narratives and other creative texts in which they recount two or more appropriately sequenced events, include some details regarding what happened, use temporal words to signal event order, and provide some sense of closure. 1.6.6.6 With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers.	1.4.1.1.1 Historians generally construct chronological narratives to characterize eras and explain past events and change over time. 1.4.1.2.1 Historical inquiry is a process in which multiple sources and different kinds of historical evidence are analyzed to draw conclusions about how and why things happened in the past. 1.4.2.4.1 The differences and similarities of cultures around the world are attributable to their diverse origins and histories, and interactions with other cultures throughout time.

Enduring Understandings	**Essential Questions**
Students will understand that… Math There are rules and patterns in combining and separating numbers. There are multiple ways to get to a solution. Mathematics can be used to solve problems outside	Math How does math help you solve real life problems? Is your plan working? Do you need to reconsider what you are doing? How are showing and explaining different? How do you make sense of different strategies? How do

of the mathematics classroom. Mathematics is built on reason and always makes sense. <u>Social Studies</u> History is made up of events from the past. History influences the present. My own personal history is unique. My experiences may be similar and different from those of others. <u>Language Arts</u> There is a central message in fictional texts. Narratives are a way of sharing about the past. Writing is a method of communicating about the past.	you determine their strengths and weaknesses? <u>Social Studies</u> What can I learn about myself by studying my family's past? What can I learn about others by studying history? How does the past influence the present? <u>Language Arts</u> How are messages shared through speaking, listening, reading, and writing? How are punctuation marks, grammar, and conventional spelling like highway signs and traffic signals?
Knowledge	**Skills**
Students will know that… <u>Math</u> Adding means to combine parts to make a total. There are many tools and strategies that can be used to solve math problems. Skip counting is a form of addition. <u>Social Studies</u> Each family has a different history. A timeline is a series of events that have happened. At least 3 events have happened in their own family history. Other people have different and similar experiences from themselves. People make decisions based on past experiences. <u>Language Arts</u>	*Students will be able to…* <u>Math</u> Compose and decompose numbers with emphasis on making combinations of 10. Use various math tools to explain addition (dominoes, number lines, number grids, counters, etc.). Solve addition problems using a variety of thinking strategies. Compose and decompose numbers fluently. Use doubles and doubles plus 1 to compose and decompose numbers. Use math to solve problems related to social justice in their own lives. <u>Social Studies</u> Inquire about their own history by asking their families basic historical questions.

What the meaning of key details, characters, and setting are. The difference between fictional and nonfictional texts. What the parts of a personal narrative are. The steps of the writing process. The parts of a sentence (capital letter, a complete idea, and punctuation). Various temporal words.	Create a timeline of events from their own life. Analyze their family history to draw conclusions about their present life. Present their family history and conclusions to peers. Listen to the presentations of peers. Compare and contrast their own personal history to that of peers. <u>Language Arts</u> Retell key details from a fictional text. Define the words: characters, setting, and main event. Identify the characters, settings, and main events in a story. Collaborate in shared writing with peers to recount a personal narrative. Participate in the writing process: ideas, drafting, editing, revising, and publishing (with guidance and support from adults). Write a personal narrative with at least 2 appropriately sequenced events, details, temporal words, and a conclusion.
STAGE TWO: ASSESSMENT EVIDENCE	
<u>Performance Tasks</u> <u>Math</u> *Post-assessment:* Written and oral exam related to skills taught during the math unit. *Social justice word problem solving:* Cooperative groups use addition to solve social justice word problems presented to them. <u>Social Studies & Language Arts</u> *Personal Narrative***:** The History Society has requested that you publish a personal narrative about your family's history. Describe at least	**<u>Other Evidence</u>** <u>Math</u> *Pre-assessment*: Written and oral exam related to skills taught during the math unit. *Exit slips:* Done approximately twice a week. *Teacher observation & student interviews* <u>Social Studies & Language Arts</u> *Family portrait***:** Draw a portrait of your family. Include elements that reflect your family's history including skin tone, culture, heritage, religion, gender, and countries of origin.

two events that have happened in your life and give details. Make a conclusion about how your past has impacted your present. (Presentational: To be shared orally in pairs.) *Retelling:* Retell a read aloud orally including characters, setting, and 3+ events in sequence.	*Timeline***:** Create a personal history timeline including at least three events from your life. Draw and write about each event. *Retelling:* Listening during read alouds, retelling in pairs. *Sharing:* Family interview results pair share.

STAGE THREE: LEARNING PLAN

Math Week 1:

Overview: This week students will explore the concept of adding 0, 1, or 2 through the use of story problems and a variety of math manipulatives. Students will make connections between math at school and math at home. The focus standard this week is to recognize the relationship between counting and addition. Students will learn how to explain their mathematical thinking.

Essential Question (EQ): How are showing and explaining different?

Content Objective (CO): I can tell why math helps me in my day to day life.

CO: I can combine two parts to make a total (focus on adding 0, 1 and 2 through story problems-PPT).

CO: I can use various math tools to explain addition (introduce story mats, 5 tables, 10 tables, dominoes, number lines, hundreds chart, counters, etc.).

Vocabulary: sumar, más, en total, igual a, parte-parte-total, tablas de 5, tablas de 10, dominó, cubos, recta numérica, cuadrícula de números, fichas

Math Week 2:

Overview: This week students will continue to build their understanding of addition by solving more challenging story problems. Students will practice adding to a total of 5 and adding within 5. The focus standard this week is to use words, pictures, objects, connecting cubes, and number lines to model and solve addition problems. Students will learn that there are a variety of strategies to solve a math problem, and will analyze the effectiveness of their

Social Studies & Language Arts Week 1:

Overview: This week students will interview family members about their own personal history. Students will create a timeline of at least 3 events from their lives. The focus standard this week is *historians generally construct chronological narratives to characterize eras and explain past events (1.4.1.1.1)*. Students will learn about their own personal identities.

EQ: What can I learn about myself by studying my family's past?

CO: I can ask my family questions about my past.

CO: I can create a timeline of events from of my life.

CO: I can listen to others with respect.

CO: I can describe myself.

Vocabulary: historia, el pasado, línea de cronología, narrativa, personaje, ambiente, evento principal

Social Studies & Language Arts Week 2:

Overview: This week students will write a personal narrative about their past. Students will share their personal history with peers and learn about the history of others. The focus standard this week is *write narratives in which they recount two or more appropriately sequenced events, include some details regarding what happened, use temporal words to signal event order, and provide some sense of closure (1.6.3.3)*. Students will learn about the parts of a personal narrative including characters, setting, and main events.

EQ: What can I learn about others by studying history?

strategies of choice.

EQ: Is your plan working? Do you need to reconsider what you are doing?

CO: I can combine numbers to make a total (focus on ways to make 5, and adding within 5 through story problems). Introduce rekenreks.

CO: I can solve addition problems using a variety of thinking strategies.

Vocabulary: combinar, primero, luego, en total, estrategia, efectivo, review words from week 1

Math Week 3:

Overview: This week students will practice solving addition story problems focused on ways to make 10. Students will solve and write story problems that are related to problems they encounter in their daily lives. The focus standard this week is composing numbers up to 12 with an emphasis on making 10. Students will learn that there are a variety of strategies to solve a math problem, and will analyze the effectiveness of their strategies of choice.

EQ: How do you make sense of different strategies? How do you determine their strengths and weaknesses?

CO: I can use math to solve problems in my life.

CO: I can compose numbers fluently (focus on ways to make 10 through story problems).

Vocabulary: componer, review vocabulary from weeks 1 and 2

Math Week 4:

Overview: This week students will be introduced to the symbols +, =. Students will explore the various ways to express numeric equations including those with missing addends. Students will solve story problems that emphasize the use of doubles and doubles plus 1. The focus standard this week is determining if equations involving addition are true. Students will use math to solve real life problems in cooperatives groups.

EQ: How does math help you solve real life

CO: I can write a personal narrative with at least 2 appropriately sequenced events, details, temporal words, and a conclusion.

CO: I can identify the characters, settings, and main events in a story.

Vocabulary: narrativa personal, primero, luego, después, entonces, finalmente, personaje, ambiente, eventos

Social Studies & Language Arts Week 3:

Overview: This week students will analyze their family history to draw conclusions about their past. Students will use writing to express ideas about their past. The focus standard this week is *historical inquiry is a process in which historical evidence is analyzed to draw conclusions about how and why things happened in the past (1.4.1.2.1).* Students will learn about complete sentence conventions.

EQ: How are messages shared through speaking, listening, reading, and writing?

CO: I can analyze my family history to draw conclusions about my present life.

CO: I can write a personal narrative with at least 2 appropriately sequenced events, details, temporal words, and a conclusion.

CO: I can collaborate in shared writing with peers to recount a personal narrative.

CO: I can retell key details from a fictional text.

Vocabulary: frase, puntuación, letra mayúscula, conclusión

Social Studies & Language Arts Week 4:

Overview: This week students will present their personal narratives. Students will compare and contrast their history to that of peers. The focus standard this week is *the differences and similarities of cultures around the world are attributable to their diverse origins and histories, and interactions with other cultures throughout time (1.4.2.4.1).* Students will learn about how the past influences the present.

EQ: How does the past influence the present?

EQ: How are punctuation marks, grammar,

problems? CO: I can use math to solve problems in my life. CO: I can solve for a missing addend (focus on doubles and doubles plus 1 through story problems). Vocabulary: símbolo, equivalencia, más, igual a, dobles, justicia, review vocabulary from weeks 1-3	and conventional spelling like highway signs and traffic signals? CO: I can present my family history and conclusions to my peers. CO: I can listen to the presentations of peers. CO: I can compare and contrast my personal history to that of my peers. CO: I can write a personal narrative with at least 2 appropriately sequenced events, details, temporal words, and a conclusion. CO: I can participate in the writing process: ideas, drafting, editing, revising, and publishing. Vocabulary: diferente, similar, comparar

APPENDIX B

WEEK ONE LEARNING PLAN

Week One Learning Plan

<table>
<tr><th colspan="2">WEEK ONE</th></tr>
<tr><th>Math</th><th>Social Studies & Language Arts</th></tr>
<tr><td><u>Overview</u>: This week students will explore the concept of adding 0, 1, or 2 through the use of story problems and a variety of math manipulatives. Students will make connections between math at school and math at home. The focus standard this week is to recognize the relationship between counting and addition. Students will learn how to explain their mathematical thinking.

<u>Essential Question</u>: How are showing and explaining different?

<u>Vocabulary</u>: sumar, más, en total, igual a, parte-parte-total, tablas de 5, tablas de 10, dominó, cubos, recta numérica, cuadrícula de números, fichas

<u>Centers</u>:

Story mat problem solving

Tirar hasta 5/10/20

Llegar al 50

Salta del conejito</td><td><u>Overview</u>: This week students will interview family members about their own personal history. Students will create a timeline of at least 3 events from their lives. The focus standard this week is historians generally construct chronological narratives to characterize eras and explain past events (1.4.1.1.1). Students will learn about their own personal identities.

<u>Essential Question</u>: What can I learn about myself by studying my family’s past?

<u>Vocabulary</u>: historia, el pasado, línea de cronología, narrativa, personaje, ambiente, evento principal

<u>Read alouds:</u>

Estoy orgullosa de mi pasado (Amy White)

Quienquiera que seas (Mem Fox)

I look like a girl (Sheila Hamanaka)

Todos los colores de nuestra piel (Katie Kissinger)

The Skin I’m in (Lesley Harker)

*Books in English will have to be translated prior to reading if a Spanish translation is not available.

*Prior to beginning the unit: Send home the family Questionnaire in both English and Spanish about two weeks before beginning the unit. Students should complete the questionnaire as homework and return it to school.</td></tr>
<tr><th colspan="2"><u>DAY 1</u></th></tr>
<tr><td><u>Assessment</u>

Give pre-assessment of the unit. Review directions as a whole group. Allow students to ask questions or have test read to them. Emphasize that the test is</td><td><u>CO</u>: I can ask my family questions about my past.

<u>CO</u>: I can listen to others with respect.</td></tr>
</table>

only used for the teacher to learn about students, and not for formal evaluation. Tell students to do their best work, but that some questions may be skipped if needed.	**Reader's Workshop** **Mini Lesson:** Activate prior knowledge: What is history? T&T with a partner, share ideas with class Read aloud: *Estoy orgullosa de mi pasado* (Amy White) Anchor chart: What does it look like, feel like, and sound like to listen to others share about themselves? Record ideas on chart. Practice listening by doing a whip around share to answer the question: What is something you like to do with your family? **Independent reading/Guided reading/Literacy centers:** Set up a daily classroom routine where students practice reading independently. When done reading independently, students move to literacy centers including word work, writing, listening to books, or reading with a friend. During this independent work time, the teacher works with small guided reading groups. **Writer's Workshop** **Mini Lesson:** Remind students of the conversation earlier about history. What is their history? What is something they have done in the past? Remind them their past could be yesterday, last week, last year, or when they were babies, anything that happened during their lives. Hand out note cards for each student to write or draw an even they remember having happened in their past. When done, students will share their event with a partner. Create a class list of life events on a chart. **Student Writing:** Students will make a list of 3 or more events they remember happening in their personal history, they may borrow ideas from friends if they have had similar experiences. If students are done early, they may write/draw more about one event. **Close Reader's & Writer's Workshop:** Reinforce that our unique experiences make us individuals with personal histories. Allow students to share one thing that happened to them in their history.
DAY 2	
CO: I can tell why math helps me in my day to day life.	**CO**: I can create a timeline of events from of my life.

CO: I can combine two parts to make a total. **Whole group** **Introduce** the big idea (content objectives) and post them on an anchor chart **Make connections:** Ask students to make connections between math and their day-to-day lives. When do you use math at home? When do you use math at school? Students will turn and talk to a partner (T&T) about their experiences. Students will then draw/write their connections on an index card. **Card Exchange Activity:** Create one inner and one outer circle so that pairs of students are facing one another. Inner circle students will share the connection they drew with their partner using the sentence frame, "*Yo uso matemáticas cuando _____."* Then the outer circle student will share their connection. Partners will trade index cards. The outer circle will rotate one person to the right. New partners will share the connection drawn by previous partner using the sentence frame, "*Mi compa usa matemáticas cuando _____."* Continue sharing as appropriate. **Close** Tape student connections to anchor chart and review common themes that emerged. **Independent work** Students will select a math center taught in previous unit for review and practice. **Assessment** Use data from pre-assessment to guide instructional choices for the beginning of the unit. Also, use this assessment to create preliminary guided math groups based on areas of need.	**CO:** I can listen to others with respect. **Reader's Workshop** **Mini Lesson:** Read aloud: *Quienquiera que seas* (Mem Fox) Ask students what they like about the book. Tell students to look around the room at all their classmates and they tell them that everyone may look different but everyone has love on the inside. Present them with two colored eggs, one white egg and one brown egg. Crack each egg in front of them, say the eggs represent them and even though we all have differences, we also have many similarities. Ask students if they have ever been treated or treated someone else differently because of the way they looked. Have a conversation about what it means to treat others with respect, refer back to chart about how to listen with respect from day 1. **Independent reading/Guided reading/Lit centers** **Writer's Workshop** **Mini Lesson:** Explore a variety of timelines that will activate student's prior knowledge about what a timeline is (class trips, student's birthdays, daily schedule, etc.) Model making a timeline of teacher's life using some of the events listed on chart from day 1. At the beginning of the timeline write, "I was born.9/22/1986" At the end of the end of the timeline write, "I studied history in first grade. Date" Tell students that any other events must be place somewhere in-between these two. Add 2 or 3 other events to my timeline. Draw pictures for each event. **Student Writing:** Students will write and draw their own personal history timelines with at least 3 events. **Close Reader's & Writer's Workshop:** Partners will share their timelines with one another.
DAY 3	
CO: I can combine two parts to make a total (focus on adding 0, 1 and 2 through story problems-PPT). **CO**: I can use a story mat to solve an addition word problem.	**CO:** I can describe myself. **Reader's Workshop: Who we really are** **Mini Lesson:** Read aloud: *I look like a girl* (Sheila Hamanaka) Talk about each page/pictures. Ask students

<u>Whole group</u> **Introduce story mats** using story problems of +0, +1, and +2. Students will each receive their own story mat and 10 counters. **Anchor chart:** Write on an anchor chart the sentence frame: *Primero hay _____. Luego hay ___ más. En total hay _____*. Use this frame for all story problems. Interactively model solving problems using a felt story board. **<u>Independent work</u>** **Story Mat Problem Solving:** Group students in cooperative triads homogeneously by ability on the pre-assessment. Student A (storyteller) invents a story problem using sentence frame on anchor chart. Student B (recorder) writes story in her math journal. Student C (calculator) solves using story mat or other strategy. Student A checks answer. Students rotate jobs. *Turn this activity into a math center. **<u>Guided Math</u>** Work first with triads that need most support. Ask student to explain their strategy and how they know they got the correct answer. Move to other triads to provide support or extensions as needed. **<u>Close</u>** T&T-What strategies did you use to solve math story problems today? Add strategies to an anchor chart entitled: *Nuestras estrategias.* **<u>Assessment</u>** Record observations made during guided math about students' strategies.	to consider what the narrator might mean when she says things like, "I look like a girl, but really I'm a tiger." Push the discussion in the direction of gender stereotypes by asking questions like, "Why is it surprising for a girl to say that inside she is a tiger? **Independent reading/Guided reading/Lit centers** **<u>Writer's Workshop</u>** **Mini Lesson:** Revisit book *I look like a girl*. In small groups, students will talk about aspects of their identities that might not show on the outside. Encourage them with a teacher example-as a teacher I seem outgoing and brave, really I'm very shy and it takes a lot of effort for me to be so outspoken. **Student Writing:** After talking about personality traits, students will write in their journals about their ideas. Encourage each child to think of a metaphor for one or more of her or his 'hidden' characteristics just like the character in the book. I usually say, "I look like a teacher, but really I'm a turtle who likes to hide in my shell." Allow students to help each other, because part of the purpose of this activity is to understand one another more deeply. Give each student a piece of black construction paper. Students will draw their inner animal, writing their statement at the bottom of the page in the style of Hamanaka's book. **Close Reader's & Writer's Workshop:** Students will share their "self-portraits" with peers. Display them in the classroom as expressions of who everyone really is, and return to these portraits when children are losing track of their deeper selves and getting stuck on superficial details.
<u>DAY 4</u>	
<u>CO</u>: I can combine two parts to make a total (focus on adding 0, 1 and 2 through story problems-PPT). **<u>CO</u>**: I can use various math tools to explain addition (introduce 5 and 10 frames).	**<u>CO</u>**: I can describe myself. **<u>Reader's Workshop: Looking closely at ourselves</u>** **Mini Lesson:** In triads, students talk about: What does it mean to look closely? Why is looking closely important in

Whole group

Word problem of the day Teach this routine today. As students arrive for Math Workshop they will take out their math journal and glue in a slip of paper with the word problem of the day. Manipulatives are easily accessible for students to use while working on solution. Students solve problem independently using the strategy that works for them. Students who need help reading may ask a friend or teacher. Students who finish early may write/solve other math problems in their journal.

Word problem: *Primero hay 7 amigos jugando fútbol. Luego vienen 2 más. En total hay ____.*

Sharing: Take note of students' solution strategies. When students are done solving problem, ask 2-3 students to share their methods with the rest of the class. Begin with the least complicated strategy and move up. For example: first select a direct modeler who used the story mat, then select a counter who used fingers, then select someone who used derived facts.

Interactive model math center: *Tirar hasta 5*. Using a base-5 frame, students will roll a die (1-5) and record the number they rolled. They will then determine how many more are needed to have 5 in all.

Independent work

All students will practice math center. Differentiate by having the option to play *Tirar hasta 10* or *Tirar hasta 20.* When done, students will select a different math center to practice for review.

Guided Math

Teacher tip: If guided math and independent work time have not been previously set up as a classroom routine, take a week or two to do so. Spend time answering the questions:

-What does math workshop look like, feel like, and sound like?
-How do good mathematicians talk about their ideas?
-How do mathematicians show their work?
-How do we work and play together during math centers?

school? Why is it important in life outside of school? Ask groups to share with whole group.

Talk as a class about the importance of looking closely at ourselves, what do we notice about ourselves and others? One thing we often notice—also one of the first things other people notice about us—but sometimes don't talk about, is the color of our own skin and each other's skin.

Read aloud: *Todos los colores de nuestra piel* (Katie Kissinger) Discuss: What is color? What is skin? What is skin color? Why is it important? Why isn't it important?

Independent reading/Guided reading/Lit centers

Writer's Workshop

Mini Lesson: Review conversation about looking closely. Introduce the idea of beauty as one reason we look closely at something/one. Ask students, What does beauty mean to you? Are there different ways to be beautiful? On a chart paper list ideas that children associate with the word "beauty."

Hand out small mirrors and allow students to look closely at themselves. Tell them to pay attention to: the shapes of their faces, the different shades of skin, and the different features they have. Model drawing a self-portrait of yourself using pencil while looking in the mirror. Model selecting a crayon color that matches the skin on your face, add color to portrait.

Student Writing: Students will draw a self-portrait of themselves using skin colored crayons and mirrors.

Close Reader's & Writer's Workshop: Ask students the following questions:

-How did looking closely at yourself influence the way you see and think about yourself?
-Why is it important to practice looking closely at yourself?
-What does the word "race" mean to you?
-How did or didn't the experience of looking closely at yourself through painting a self-portrait change or influence your thinking about skin color or race?
-What do you think is especially beautiful about yourself?

Display portraits in the room for students to see.

Teacher tip: If you have not had a class conversation about how to respectfully comment on the work of others,

-How do we decide who goes first? **Guided Math Lesson:** Meet with two groups (A&B) during independent work time. Practice solving addition story problems using numbers appropriate for the level of the group. Have students share their solution strategies for their peers. **<u>Close</u>** T&T- What strategies did you use today to solve math problems? Add new ideas to anchor chart. **<u>Assessment</u>** Make notes on observations made during guided math.	take time to do so.
<u>DAY 5</u>	
<u>CO</u>: I can combine two parts to make a total (focus on adding 0, 1 and 2 through story problems-PPT). **<u>CO</u>**: I can use various math tools to explain addition (introduce number lines, hundreds charts) **<u>Whole group</u>** **Word problem of the day:** *Primero hay 4 niñas saltando la cuerda. Luego hay 4 más. En total hay ___.* **Sharing** Follow Day 4 sharing guidelines. **Interactive model math centers:** *Llegar al 50* Students take turns rolling a die and moving counter that many spaces along the number grid. The first student to 50 wins. *Salta del conejito* Students take turns rolling a die and hopping a bunny across a number line that many spaces. The first bunny to 20 wins. *Discuss the connection between the two math centers and addition. **<u>Independent work</u>** All students will practice math centers in pairs. Differentiate by having the option to play *Llegar al ___ (*bigger or smaller number*).* When done, students will select a different math center to	**<u>CO</u>**: I can describe myself. **<u>Reader's Workshop</u>** **Mini Lesson:** Refer to day 4's lesson about looking closely and the meaning of beauty. Ask students, "Has there ever been a time you thought something about someone else before looking more closely?" "Has anyone said something about you before getting to know you?" Sometimes we forget to look closely, and think something about someone without knowing them; this is called prejudice (pre-judge). Brainstorm about the types of judgments people might make without getting to know someone. "What is something someone might think about you just from looking at you?" Chart students' responses, writing the broader categories on the board, such as "gender" and "age." Read aloud: *The Skin I'm In* (Lesley Harker) **Independent reading/Guided reading/Lit centers:** **<u>Writer's Workshop</u>** **Mini Lesson:** Refer back to the reading lesson discussion about types of prejudice. Students will be reflecting on the difference between what others might assume about them and how they truly are on the inside. Model making a paper plate portrait by drawing your face on the "bump" of the paper plate and writing words that someone might think about you. On the other side, draw a heart and write

practice for review. **<u>Guided Math</u>** Meet with two different groups (C&D) during independent work time. Practice solving addition story problems using numbers appropriate for the level of the group. Have students share their solution strategies for their peers. **<u>Close</u>** T&T-What strategies did you use today to solve math problems? Add new ideas to anchor chart. **<u>Assessment</u>** Make notes on observations made during guided math.	words that describe your personality. **Student Writing:** Students will draw their faces on the outside or "bump" of a paper plate. They will then write a few words or phrases that they think someone might assume about them. On the inside or "crater" of the plate, students color in a heart and write words or phrases that describe their character/personality—who they really are. **Close Reader's & Writer's Workshop:** Students will do a short "gallery walk" to admire the collective work of the class. Then discuss as a class: What did you discover? Were you surprised by anything? Did you make any connections between your plate and a classmate's? How did this activity help you understand the meaning of prejudice? What can we do if we notice or experience prejudice? How can we try to stop it from happening?

APPENDIX C

WEEK TWO LEARNING PLAN

Week Two Learning Plan

<table>
<tr><th colspan="2">WEEK TWO</th></tr>
<tr><td><u>Math</u></td><td><u>Social Studies & Language Arts</u></td></tr>
<tr><td><u>Overview</u>: This week students will continue to build their understanding of addition by solving more challenging story problems. Students will practice adding to a total of 5 and adding within 5. The focus standard this week is to use words, pictures, objects, connecting cubes, and number lines to model and solve addition problems. Students will learn that there are a variety of strategies to solve a math problem, and will analyze the effectiveness of their strategies of choice.

<u>Essential Questions</u>: Is your plan working? Do you need to reconsider what you are doing?

<u>Vocabulary</u>: combinar, primero, luego, en total, estrategia, efectivo, review words from week 1

<u>Centers:</u>

Supera el domino

Tres torres

Memoria crear 5

Chícharos y zanahorias</td><td><u>Overview</u>: This week students will write a personal narrative about their past. Students will share their personal history with peers and learn about the history of others. The focus standard this week is write narratives in which they recount two or more appropriately sequenced events, include some details regarding what happened, use temporal words to signal event order, and provide some sense of closure (1.6.3.3). Students will learn about the parts of a personal narrative including characters, setting, and main events.

<u>Essential Question</u>: What can I learn about others by studying history?

<u>Vocabulary</u>: narrativa personal, primero, luego, después, entonces, finalmente, personaje, ambiente, eventos

<u>Read alouds:</u>

We all have heritage (Sandy Lynn Holman)

Hello World (Manya Stojic)

La colcha de recuerdos (Patricia Polacco)

Pelitos (Sandra Cisneros)

Cuadros de familia (Carmen Lomas Garza)

Pepita habla dos veces (Ofelia Dumas Lachtman)

René tiene dos apellidos (René Colato Laínez)

Let’s talk about race (Julius Lester)</td></tr>
<tr><td colspan="2"><u>DAY 1</u></td></tr>
<tr><td><u>CO:</u> I can combine numbers to make a total (focus on ways to make 5, and adding within 5 through story problems). Introduce rekenreks.

<u>CO</u>: I can solve addition problems using a variety of thinking strategies.</td><td><u>CO:</u> I can describe my family.

<u>Reader’s Workshop: My Family Journey</u>

Mini Lesson: Read aloud: We all have heritage (Sandy Lynn Holman)

Today we are going to take a journey. T&T: What does</td></tr>
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Whole group **Word problem of the day:** *Ashley tenía 1 peluche. Recibió 4 más para su cumpleaños. ¿Cuántos peluches tiene ahora? Tiene ___ peluches ahora.* **Interactive model math center:** Memoria crear 5 Players flip 20 cards numbered 0-5 upside-down. Players take turns turning over two cards and determining whether or not the cards total 5. If they do, the player keeps the two cards and plays again. If they don't the player flips the cards back. Players are encouraged to use solution strategies that work best for them (fingers, number line, base-5 frame, part-part-total mat, counters). **Independent work** All students will practice math center in pairs. Differentiate by having *Memoria de crear 10 o 20* game cards available. **Guided Math** Meet with groups A&B. Warm up: Flash a base-5 frame with only some of the squares filled in for 2 seconds. Ask students how many more are needed to make 5. Practice composing numbers appropriate for the level of the group. Focus on making 5 if needed, and then move on to making 6, 7, 8, 9, & 10. Model how to use a part-part-total mat and a 10 frame, but allow students to select any strategy that works for them. Pose word problems for the group, and provide individuals time to solve. In pairs, students will share their solution strategy. **Close** T&T: What plan did you use to solve math problems today? Did it work? Why do you think it did/didn't work? **Assessment** Make notes on observations made during guided math.	the word "journey" mean? Share some responses with whole group. We will explore your "Family Journey." We will explore your family history, which connects to your life now. Look at a world map. Put in a pushpin to show the location of our school. Discuss briefly how we have a family history of moving from one place in the world to another. Ask students, Where were you born? Where were your parents born? **Independent reading/Guided reading/Lit centers:** During independent work time do the following with each student: -Put a pushpin in your birthplace (if different from the location of the school) -Put a pushpin in the city/country where parents or other ancestors are from (if different from the location of the school) -Connect the pushpins of individual students with string to track the movement of his/her family **Writer's Workshop** **Mini Lesson:** Read aloud: *Hello World* (Manya Stojic) Look at the map of the world. These strings track the journeys of each of your families. T&T: How do you think these journeys have influenced your family? How have they influenced our community? (food, customs, celebrations, traditions) Discuss how each family has contributed to the culture of our community. **Student Writing:** Take out the completed Family Questionnaires sent home before beginning the unit. Students will write in their Family History book about themselves using the information on the questionnaire. Students will write about their family's state/country of origin and the languages spoken in their family. **Close Reader's & Writer's Workshop:** In pairs students will share their writing pages completed today. Then as a whole group partners will share one thing they learned about their partner.
DAY 2	
CO: I can combine numbers to make a total.	**CO:** I can describe my family.

Introduce rekenreks.

CO: I can solve addition problems using a variety of thinking strategies.

Whole group

Word problem of the day: *Sebas está jugando con 3 amigos. Luego vinieron 2 amigos más. ¿Cuántas personas están jugando en total?*
Hay _____ personas jugando ahora.

Interactive model math center: Chícharos y zanahorias

Tell students a story about how I spilled my peas and carrots dinner last night. When I started cleaning up, I scooped 7 vegetables onto my spoon. How many could have been peas and how many could have been carrots? Draw a big plate on chart paper and write *7 en total* at the top. Briefly discuss 1 or 2 solutions, and emphasize that there are many ways to solve. Students will work in pairs to come up with as many solutions as possible.

Independent work

All students will practice math center in pairs. Differentiate by providing students with manipulatives. If students are having trouble making a total of 7, draw 7 sections on their plate and give them just 7 cubes, one for each section. If the activity is too easy, increase the total to 10, 12, or 20 as needed.

Guided Math

Walk around the room and observe student's solution strategies. Make sure students are recording their work. Ask students if they notice a relationship between the number of peas and the number of carrots. "What happens to the number of carrots as the number of peas increases? What happens to the number of carrots as the number of peas decreases?"

Close

Have students bring their solutions to the carpet. Share solutions: "_____ got 4 peas and 3 carrots. Did anyone else get that?" Record that solution on chart. Ask for different combinations of 7 peas and carrots. Ask students if they notice a relationship between the number of peas and the

Reader's Workshop

Mini Lesson: Play a game of "Guess who I am?" Prior to the game take photos of the back of student's hands and heads. Post a photo on Smart Board and have students guess who is in the photo. Lead a discussion about how we all have different traits that make us unique. Sometimes (not always) we share traits with members of our family. T&T about how you and your family members look alike or different.

Read aloud: *Pelitos* (Sandra Cisneros)

After reading ask students to make connections between the story characters and their own families.

Independent reading/Guided reading/Lit centers:

Writer's Workshop: My Family Rocks

Mini Lesson: Ask students, "What does *family* mean to you?" Give each student a note card and have them complete the sentence, "*Una familia es…"*

When done students will get a magazine and look through it to find and tear out a picture of a family. (Prior to the lesson hang the numbers 2-10+ around the room). Ask students to stand next to the number that shows how many people are in the photo they have. Notice the number of students standing by each sign. Which sign has the most people? Which sign has the fewest people?

Students will sit with the people at their number and share their photo. Explain to your group why you think your picture represents a family.

Listen to the family descriptions and stand up every time a family is described:

- An African-American mom and her adopted Chinese daughter.
-A man and a woman with no children.
- Parents and guardians with 11 children and a grandchild.
-A mom, a stepdad and a son.
-A girl and her two dads.
-A boy and his foster parents

Talk about how each descriptor is a family, and we all have our own definition of a family. Look through the magazines as a whole group and identify other possible families. Look back at notecard definitions and ask students if they want to change or add anything to their

number of carrots. What happens to the number of carrots as the number of peas increases? Ask if there is a way to know when we have found all possible combinations of 7 peas and carrots. **Assessment** Exit slip 1: Write as many ways as you can to make 5. Write as many ways as you can to make 7. How do students approach, model, and solve the peas and carrots problem? How do they show their work?	definition. Count in your mind the number of people in your own family. Stand by the number of people in your immediate family. Now which sign has the most people? Did the groupings change? In your new group, have each member share who is part of their family. Is everyone's family exactly the same, or are there differences? **Student Writing:** Model how to ask a partner about their family by reading one of the questions on the sheet to a student. When I find someone who matches a description, I will write their name in the box. Give each student a copy of the "Family Scavenger Hunt" sheet, and students will complete the scavenger hunt. **Close Reader's & Writer's Workshop:** Ask, "Did anyone find all 10?" "What did you learn about your peers in this activity?" "How does it make your community better to have so many different types of families?"
DAY 3	
CO: I can combine numbers to make a total (focus on ways to make 5, and adding within 5 through story problems). **CO**: I can solve addition problems using a variety of thinking strategies. **Whole group** **Word problem of the day:** *Akaela cantó Suléltalo 4 veces hoy. Si ella quiere cantar la canción un total de 6 veces, ¿Cuántas veces más debe cantarla? Debe cantar _____ veces más.* **Interactive model math center**: Chícharos y zanahorias (see day 2) 8, 9 or 10 in total. Assign pairs to explore ways to make another number. Assign number to explore based on observations from day 2 and data from exit slips. **Independent work** Students will practice math center in pairs. When done, they will select a different math center for review and practice.	**CO:** I can identify the characters, settings, and main events in a story. **Reader's Workshop** **Mini Lesson:** Refer back to yesterday's lesson about the definition of family. Discuss the idea of last names, talk about how some families have one last name and others have two. Ask students how many last names they have. Read aloud: *René tiene dos apellidos* (René Colato Laínez) **Independent reading/Guided reading/Lit centers** **Writer's Workshop** **Mini Lesson:** Remind students that they all have unique families, with unique histories. Model making a family portrait that shows each member of your unique family. Write, "*Mi familia es única porque* _____. Draw each family member and something that represents each person. **Student Writing:** Students will create family portraits and write about what makes their family unique.

<u>Guided Math</u> Meet with groups C&D. Warm up: Flash a base-5 frame with only some of the squares filled in for 2 seconds. Ask students how many more are needed to make 5. Practice composing numbers appropriate for the level of the group. Focus on making 5 if needed, and then move on to making 6, 7, 8, 9, & 10. Model how to use a part-part-total mat and a 10 frame, but allow students to select any strategy that works for them. Pose word problems for the group, and provide individuals time to solve. In pairs, students will share their solution strategy. **<u>Close</u>** T&T: What plan did you use to solve math problems today? Did it work? Why do you think it did/didn't work? **<u>Assessment</u>** Make notes on observations made during guided math.	**Close Reader's & Writer's Workshop:** Students will share their portraits with the rest of the class, and tell why their family is unique. Make a class book of all the family portraits for students to read at a later time.
<u>DAY 4</u>	
<u>CO:</u> I can combine numbers to make a total **<u>CO</u>**: I can solve addition problems using a variety of thinking strategies. **<u>Whole group</u>** **Word problem of the day:** *5 amigos estaban jugando Sonic en el recreo. Luego 2 más querían jugar. Los 5 amigos dijeron que no podían jugar. ¿Cuántos niños están jugando Sonic? Hay ___ niños están jugando Sonic.* *Los 5 amigos decidieron que sería más divertido con los otros 2 jugando también. ¿Cuántos niños están jugando Sonic ahora? Hay ___ niños están jugando Sonic.* **Interactive model math center:** *Tres torres-Ways to make 10* Each player picks a color of unifix cubes. Player 1	**<u>CO:</u>** I can write a personal narrative with at least 2 appropriately sequenced events, details, temporal words, and a conclusion. **<u>CO:</u>** I can identify the characters, settings, and main events in a story. **<u>Reader's Workshop</u>** **Mini Lesson:** Before the lesson, compile 15-20 mentor texts that provide examples of personal narratives (see list in Appendix H for ideas). Prepare an anchor chart entitled *Una narrativa personal. Lo que notamos:* Give students the stack of mentor texts and some post-its. Students will explore the mentor texts and notice the elements of the stories. Students will write what they notice on post-its and stick it to the page to share later. When students are done noticing things, bring them together again to compile a list of what they noticed. (The words: characters, setting, problem, solution, hook,

rolls a die and makes a tower with that many cubes. Player 2 rolls and takes that many cubes. Player 2 adds the cubes to the tower. A tower can have only 10 cubes. Start a new tower with any extra cubes. The game is over when there are 3 towers of 10 cubes. Both players record. Show how many cubes of each color there are in each tower.

Independent work

All students will practice math centers in pairs. Differentiate by varying the total number of cubes in each tower. When done, they will select a different math center for review and practice.

Guided Math

Intervene with any students who have struggled with combining two numbers to find a total, or with other objectives of the week.

Close

Students will bring their record sheets to the carpet. Ask students for solutions of ways to make 10. Record ways to make 10 on an anchor chart. Ask students if they notice a relationship between the different colors in the towers. What happens to one color as the other color increases? Ask if there is a way to know when we have found all possible combinations of ways to make 10.

Assessment

Make notes on observations made during guided math.

beginning, middle, end, words, pictures, title, author, may be among the things noticed.)

Independent reading/Guided reading/Lit centers

Writer's Workshop

Mini Lesson: Read aloud: *Pepita habla dos veces* Notice personal narrative elements as you read the book. Ask students to T&T about, "Have you ever felt like you couldn't be yourself?" "How did it feel?" "What benefits have you noticed about being bilingual?" Model writing about a time in your life that you felt you needed to change to fit in. Then write about a time that being bilingual helped you.

Student Writing: Students may choose to write about a time they felt they didn't fit in, or a time when they found their skills as a bilingual person helped them.

Close Reader's & Writer's Workshop: Author's chair--select students who are interested in sharing their writing to sit in the "Author's Chair" and read their writing to the class.

If this is the first time you are doing Author's Chair, first model how to read and how to listen. Make a T-chart with the class about what behaviors are appropriate for listening, and how to read in front of the class. Make sure to select diverse students (boys/girls, students of color/white, high/average/low ability). Take note of who shares today so as to select different students in the future.

DAY 5

Whole group

Word problem of the day: *Hay 3 sillas en una mesa en la cafetería. Llegan 5 personas que quieren sentarse. ¿Cuántas sillas más necesitan? Necesitan ___ sillas más.*

Assessment

Quiz 1

Students will select a math center when done.

CO: I can write a personal narrative with at least 2 appropriately sequenced events, details, temporal words, and a conclusion.

CO: I can think of writing ideas.

CO: I can identify the characters, settings, and main events in a story.

Reader's Workshop

Mini Lesson: Read aloud: *Cuadros de familia* (Carmen Lomas Garza) Read one or more short stories from this

	book. Refer back to chart with noticings about personal narratives from day 4, or create a new chart that lists the story elements (beginning: characters/setting, middle: action/problem, end: resolution/solution). Notice the elements of a story as you read. **Independent reading/Guided reading/Lit centers** **<u>Writer's Workshop</u>** **Mini Lesson:** Tell students that now they are ready to write their own personal narratives about their lives. Look back on the Timelines students created as well as their Family Questionnaires. Use these documents to brainstorm a list of "Things I Have Done" using the handout. Model making your own Things I have Done list, focus on cultural traditions, celebrations, family trips, cooking, etc. **Student Writing:** Students will write lists about things they have done to have a bank of ideas about which they can write personal narratives. If done early, students may select a topic and being writing. **Close Reader's & Writer's Workshop:** Seat students in two circles facing each other (inner/outer circle). Ask the first pair to share about what they wrote in box 1. When done, rotate the outer circle one person to the right and share about box 2. Continue.

APPENDIX D

WEEK THREE LEARNING PLAN

Week Three Learning Plan

<table>
<tr><th colspan="2">WEEK THREE</th></tr>
<tr><th>Math</th><th>Social Studies & Language Arts</th></tr>
<tr><td>Overview: This week students will practice solving addition story problems focused on ways to make 10. Students will solve and write story problems that are related to problems they encounter in their daily lives. The focus standard this week is composing numbers up to 12 with an emphasis on making 10. Students will learn that there are a variety of strategies to solve a math problem, and will analyze the effectiveness of their strategies of choice.

Essential Questions: How do you make sense of different strategies? How do you determine their strengths and weaknesses?

Vocabulary: componer, review vocabulary from weeks 1 and 2, enlaces de numeros

Centers:

Memoria de crear 10

Plato-penny

4 para Anotar

Writing/solving story problems</td><td>Overview: This week students will analyze their family history to draw conclusions about their past. Students will use writing to express ideas about their past. The focus standard this week is historical inquiry is a process in which historical evidence is analyzed to draw conclusions about how and why things happened in the past (1.4.1.2.1). Students will learn about complete sentence conventions.

Essential Questions: How are messages shared through speaking, listening, reading, and writing?

Vocabulary: frase, puntuación, letra mayúscula, conclusión

Read alouds:

Abuela (Arthur Dorros)

Nappy Hair (Carolivia Herron)

I love Saturdays y domingos (Alma Flor Ada)

Momma, Where are you From? (Marie Bradby)

The Blacker the Berry (Joyce Carol Thomas)

El conejito Knuffle (Mo Willems)

My Rotten Red Headed Older Brother (Patricia Polacco)

Vinieron los parientes (Cynthia Rylant)</td></tr>
<tr><th colspan="2">DAY 1</th></tr>
<tr><td>CO: I can use math to solve problems in my life.

CO: I can compose numbers fluently (focus on ways to make 10 through games).

Whole group

Introduce rekenreks: Model how to use rekenreks-begin by “clearing” the rekenrek by moving all beads to the right side. Move the beads to the left side when</td><td>CO: I can analyze my family history to draw conclusions about my present life.

CO: I can write a personal narrative with at least 2 appropriately sequenced events, details, temporal words, and a conclusion.

CO: I can stretch my ideas to write a story.</td></tr>
</table>

you are solving a problem. **Play "Guess my way" with rekenreks** -Create a way to make 10 using the rekenrek and hide it behind your hand. Ask students to show 10 using the rekenrek. Call on different students to explain how they made 10 using their rekenrek. Say, "That's a great way to make 10, but it's not my way." Keep playing until a student has guessed my way. -Have two students model how to play the game with one person hiding their way, and the other person guessing. -All students play in pairs. **Word problem of the day (use rekenreks):** *Marisol tenía 3 lápices nuevos. Su amiga Roselin le dio 7 más. ¿Cuántos lápices tiene Marisol ahora? Marisol tiene __ lápices.* **Interactive model math center:** *Plato-penny* Create an Anchor Chart entitled: *Maneras de hacer 10* Ask students to T&T to tell partner one way to make 10. Model playing *Plato-penny* using a plate and 10 pennies. Partner A hides some of the pennies under the plate and puts the rest on top while Partner B closes his eyes. When Partner A says, "*Listo,"* Partner B opens his eyes and solves how many pennies are underneath the plate. Partners then switch roles. Both partners record their ways to make 10. **<u>Independent work</u>** All students will practice math centers in pairs. Differentiate by varying the total number of pennies used. When done, they will select a different math center for review and practice. **<u>Guided Math</u>** Circulate around the room and make note of the strategies used by students to solve the Penny-Plate problem. Make note of 3 strategies to share for the class during closing. Assist students who are struggling with the concept of a total of 10 by giving them a 10 frame to fill with leftover pennies. Challenge students who have found all the ways to make 10 to play with 12 or more pennies. Ask	**<u>Reader's Workshop</u>** **Mini Lesson:** Remind students of previous discussions about how we are all unique. Our uniqueness tells a story about our histories...even our hair can tell a story. Refer back to the book *Pelitos*, sometimes families share physical traits, and sometimes that is not the case. As you listen to the story, think about connections you can make with the main character, Brenda. Does your hair tell a story about your family's history? While reading, periodically stop and discuss student connections. Read aloud: *Nappy Hair* (Carolivia Herron) **Independent reading/Guided reading/Lit centers** **<u>Writer's Workshop</u>** **Mini Lesson:** Read aloud: *Abuela* (Arthur Dorros) Tell students that the book *Abuela* is a personal narrative told about one day a girl spent in the park with her grandmother. The main character stretched out one small moment into a whole book. Model selecting a topic from "Things I Have Done" list. Using a slinky, model stretching out the idea into a story. Use beginning, middle, and end planning sheet to write a personal narrative. **Student Writing:** Students will select their own small moment/memory from the list brainstormed yesterday. Use planning template to write beginning, middle and end of a personal narrative. **Close Reader's & Writer's Workshop:** In partners, students will share their narrative drafts. Before sharing, interactive model how to listen and how to share. Refer to previously made anchor charts about respectful listening or make a new one.

students if they notice a pattern in the ways to make 10. **Close** Call students to the carpet and have them bring their records. Ask the three students who were previously selected to share their strategies with the class (begin with the least advanced strategy and move on to more advanced ones). After each child shares, ask, "Did anyone else try that strategy?" and "What is good about this strategy?" Ask, "What relationship do you notice in the ways to make 10?" If students are ready, they will notice the pattern. Chart the ways to make 10 in sequence. **Assessment** Make notes on observations made during independent work time.	
DAY 2	
CO: I can use math to solve problems in my life. **CO**: I can compose numbers fluently (focus on ways to make 10 through games). **Whole group** **Word problem of the day:** *En la mesa de Punghi hay 5 borradores y 10 estudiantes. Todos quieren usar un borrador. ¿Cuántos borradores más necesita la mesa para que todos tengan un borrador? Necesitan ___ borradores más.* *Suponemos que no hay más borradores. ¿Que podrían hacer los estudiantes en la mesa de Punghi?* **Interactive model math center:** 4 para anotar Players take turns rolling a decahedron die and use chip to cover two numbers on the board that show how to decompose the number rolled. For example, if a 7 is rolled, chips could be placed on 7&0, 6&1, 5&2, or 4&3. Each player must use their own chip color. When a player gets 4 chips in a horizontal or vertical row, the player scores a point. Play continues until the board is covered, the player with the most points wins.	**CO:** I can collaborate in shared writing with peers to recount a personal narrative. **CO:** I can retell key details from a fictional text. **Reader's Workshop** **Mini Lesson:** Create an Anchor Chart entitled, *Volver a contar.* Draw a plot mountain with space for beginning, middle, and end. Explain to students that good readers stop and retell the stories they read to make sure they are comprehending the story. Being able to retell stories from books also helps us to write our own stories because we learn more about the parts of a story. Read aloud: *Momma, Where are you From?* (Marie Bradby) Periodically stop and ask students to T&T about what has happened so far in the story. After reading, fill out the retelling anchor chart as a class. Include character, setting, problem/rising action, solution, and end. **Independent reading/Guided reading/Lit centers** **Writer's Workshop** **Mini Lesson:** Read aloud: *Cuadros de familia* (Carmen Lomas Garza) Read one narrative and discuss how the author uses descriptive language to share her story. Chose

Independent work All students will practice math centers in pairs. Differentiate for struggling students to have them focus only on making 10-have them use the number rolled as one addend of 10, and have them cover the number they rolled and the other addend of 10. When done, they will select a different math center for review and practice. **Guided Math** First meet with 2-3 pairs of students who have been struggling with composing 10. Play *4 para anotar* with them and support them with solution strategies. Notice what strategies they are using and ask guiding questions to understand their thinking. Second walk around room to observe other pairs of students. Ask them about their thinking and make note of their strategies. Record which students are direct modelers, which students are counting on, and which students are using derived facts. **Close** Ask, "What strategies did you use to compose numbers in this game?" Select a direct modeler, a counter and a deriver to share their methods with the class. Record their methods on chart paper. Ask students to reflect on the three different strategies. Ask, "What is good about each strategy?" and "Which strategy would work best for you? Why?" Students will T&T with a partner to answer these questions. Then ask 1 or 2 students to share their thoughts with the class. **Assessment** Exit slip 2: Write all the ways to make 10. Make notes on observations made during guided math.	one story and read it without showing the pictures. Have students T&T about what they think the picture looks like. Read another story without showing the pictures. Give students white boards to draw what they are visualizing in their heads. Students will share their pictures with a partner. Discuss how the words the author chose helped them to visualize what was happening. Model re-reading your narrative planning map made on day 1. Think aloud about how things *looked, smelt, felt, tasted, or sounded* (5 senses). Model closing your eyes and visualizing what happened in your memory. Find places in the story that can be described better using adjectives. Use a fine-tip marker that stands out against pencil (red, blue, green, orange) to make revisions. **Student Writing:** Students will revise their writing independently using a fine-tip marker. Encourage them to make at least 4 additions. When ready, students will work in pairs. One partner will read their narrative aloud while the other partner draws what they visualize from hearing the story. This may prompt questions which can help the reader add more detail to their story. When done, partners will switch roles. **Close Reader's & Writer's Workshop:** Regroup on the carpet and ask students what kinds of words they used to add more detail to their narratives. Add ideas to a chart entitled *Detalles.* Write student tips for how to add details to their writing.
DAY 3	
CO: I can use math to solve problems in my life. **CO**: I can compose numbers fluently (focus on ways to make 10 through story problems).	**CO**: I can write a personal narrative with at least 2 appropriately sequenced events, details, temporal words, and a conclusion.

Whole group

Word problem of the day: *Azael quería comprar unos zapatos que costaban $10 dolares. Tenía $3 y su mamá le dio $6 más. ¿Azael puede comprar los zapatos? ¿Por qué? Azael sí/no puede comprar los zapatos porque _____.*

Interactive model math center: Addition story problems

Create an Anchor Chart entitled *Problemas de matemáticas.* Divide the chart into 3 sections and label them 1,2,3. In the first box write the sentence frame, "*Primero _(nombre)_ tiene _(cosa)_.*" In the second box write, *"Luego (accion) ."* In the third box write, *¿Cuantos _(cosa)_ tiene ahora?* Practice creating example stories using this frame. Ask students to T&T and each invent a problem using this frame.

In pairs, students will cut out story problem cards and put them in order to construct a problem to solve. Cards will have nouns and numbers, students will draw two of each. For example, they may draw [Juan] [pelotas] [6] [2]. They will construct a story problem with the words such as, "*Juan tiene 6 pelotas. Su amigo le dio 2 más. ¿Cuántas pelotas tiene Juan ahora?* Stories and solutions will be recorded to share.

Independent work

All students will practice math centers in pairs. Differentiate by giving some students more challenging numbers to add. When done, they will select a different math center for review and practice.

Guided Math

Meet with children who did not demonstrate understanding of ways to make 10 based on data from exit slip on day 2.

Give each student 10 counters and the option to use a rekenrek, number line, number bond, part-part-total mat, or 10 frame. Pose various story problems where 10 is the total and one part is given. Students solve for the other part and record their answer in the format of __ and __ make 10. Discuss observations of patterns that students notice.

With the same group, work together to write their

CO: I can use illustrate to show emotion in my narrative.

CO: I can retell key details from a fictional text.

Reader's Workshop

Mini Lesson: Create an Anchor Chart entitled, *Volver a contar.* Draw a plot mountain with space for beginning, middle, and end. Review reasons for retelling, ask students to T&T about why we retell stories (comprehension, better readers/writers, we like the story, storytelling is a way of communicating).

Read aloud: *I love Saturdays and domingos* (Alma Flor Ada) Periodically stop and ask students to T&T about what has happened so far in the story. After reading, fill out the retelling anchor chart as a class. Include character, setting, problem/rising action, solution, and end.

Independent reading/Guided reading/Lit centers

Writer's Workshop

Mini Lesson: Read aloud: *El conejito Knuffle* (Mo Willems). Before reading, the book, do a picture walk and ask students to notice how Trixie's emotions change throughout the story. T&T about what you noticed about Trixie's feelings from the illustrations. What is Trixie feeling? What clues did you see that made you think this? Read book.

Reflect on our predictions from the picture walk. How did we know what Trixie would be feeling? Author's use illustrations to give the reader clues about what is happening in the story.

Model turning your revised narrative into a booklet. Re-write the story with the revisions made on day 2, and add illustrations of characters (you) with emotion.

Student Writing: Students will use the personal narrative they have been working on this week to create an illustrated book. If students are stuck, encourage them to look at the illustrations from mentor texts. For students who struggle with re-writing (not yet developmentally appropriate), allow them to cut and paste their original writing into the book.

Close Reader's & Writer's Workshop: Author's chair--select students who are interested in sharing their writing to sit in the "Author's Chair" and read their writing to the class.

own story problem. Then solve problem. **Close** Pair students with a different partner. Partner A will share one of their story problems, and Partner B will solve. Then partners will switch roles. **Assessment** Make notes on observations made during guided math.	
DAY 4	
CO: I can use math to solve problems in my life. **CO**: I can compose numbers fluently (focus on ways to make 10 through writing story problems). **Whole group** **Word problem of the day:** *Primero Angeleyah encontró 4 pedazos de basura en el piso y los recogió. Luego vio 4 pedacitos más y los recogió. Finalmente vio 2 pedazos más y los recogió. ¿Cuántos pedazos recogió Angeleyah en total? Angeleyah recogió ___ pedazos de basura en total.* **Interactive model math center:** Writing addition story problems Review Anchor Chart entitled, *Problemas de matemáticas*. Ask students if there are other ways to phrase the action in addition problems (*le dio, recibió, ganó, vio, le regaló, compró, encontró, etc.)* and add ideas to the chart. Model writing and drawing an addition story problem about an event that happened to me in my life using word problem writing template. *Primero mi perro tuvo 4 cachorros. Luego mi perro tuvo 7 cachorros. ¿Cuántos cachorros tuvo en total?* Encourage students to think about events in their lives when they received more of something. (More lost teeth, more siblings, more Pokémon cards, more times they went to the park, etc.) **Independent work** All students will practice math centers in pairs. First	**CO**: I can write a personal narrative with at least 2 appropriately sequenced events, details, temporal words, and a conclusion. **CO:** I can use temporal words to show the order of events in my narrative. **CO:** I can retell key details from a fictional text. **Reader's Workshop** **Mini Lesson:** Create an Anchor Chart entitled, *Volver a contar.* Draw a plot mountain with space for beginning, middle, and end. Review reasons for retelling. Good readers stop and retell the stories they read to make sure they are comprehending the story. Being able to retell stories from books also helps us to write our own stories because we learn more about the parts of a story. Read aloud: *Momma, Where are you From?* (Marie Bradby) Periodically stop and ask students to T&T about what has happened so far in the story. After reading, fill out the retelling anchor chart as a class. Include character, setting, problem/rising action, solution, and end. **Independent reading/Guided reading/Lit centers** **Writer's Workshop** **Mini Lesson:** Draw a retelling mountain on an Anchor Chart entitled, *"Palabras de transicion."* Read aloud: *My Rotten Red Headed Older Brother* (Patricia Polacco), a book with good examples of how to use temporal words. While reading, have students put a thumb up every time they hear a temporal word. When students notice a temporal word, add it to the retelling

individuals will write their own story problem, and then they will trade with their partner to solve each other's problem. Differentiate by providing struggling writers with key vocabulary words to copy (*primero, luego, tenía, más, cuántos, tiene, ahora)*. Have extra writing template available for students who are quick writers. When done, they will select a different math center for review and practice. **Guided Math** Before sending students to "go" work, ask class who is ready to work independently on story problem writing. Those who raise their hands will go work at tables. Invite those who would like more guidance to "stay" on the carpet to write another story interactively. After this story has been written, ask again who is ready to "go" work independently. If there are still students who are not ready, they may stay and work on their own story with teacher support. **Close** Revisit the Anchor Chart created on Day 1, Week 1, When does math help you in your daily life at home or at school? Ask students if there are any new examples they have thought of about how math helps them in their daily lives. Students will think for a minute, T&T to share with a friend, and then share with the class. **Assessment** Make notes on observations made during guided math. Notice who went to work right away and plan an extra challenge for them for next week. Notice who stayed for more support and monitor their progress, plan more interventions for next week if necessary.	mountain. When done reading the book, model selecting another memory from the "Things I Have Done" chart. Using the temporal words recorded on the mountain, write another personal narrative. **Student Writing:** Students will select a new memory from their charts. Students may use another narrative planning sheet or a booklet to write and illustrate a story about their past. Students must use at least 3 temporal words in their new narrative. Remind students to write with details and illustrations. **Close Reader's & Writer's Workshop:** Author's chair--select students who are interested in sharing their writing to sit in the "Author's Chair" and read their writing to the class.
DAY 5	
Whole group **Word problem of the day:** *Sra. Morales les preguntó a la clase, ¿Qué color prefieren, verde o rosado? Los resultados fueron:* • *5 niños prefieren verde.* • *3 niños prefieren rosado.*	**CO:** I can retell key details from a fictional text. **CO**: I can write a personal narrative with at least 2 appropriately sequenced events, details, temporal words, and a conclusion.

• *6 niñas prefieren verde.* • *6 niñas prefieren rosado.* *¿Cuántos estudiantes prefieren verde? ___* *¿Cuántos estudiantes prefieren rosado? ___* *¿Qué le dirías a una persona que le gusta un color diferente del color que te gusta a ti? _____.* **Assessment** Quiz 2 Students will select a center for review when done.	**CO**: I can write a strong conclusion to my narrative. **Reader's Workshop** **Mini Lesson:** Create an Anchor Chart entitled, *Volver a contar.* Draw a plot mountain with space for beginning, middle, and end. Review reasons for retelling.. Read aloud: *The Blacker the Berry* (Joyce Carol Thomas). Periodically stop and ask students to T&T about what has happened so far in the story. After reading, give one retelling plot mountain (*Mapa de la narrativa)* to each pair. Students will draw and write about the plot of the book. When done, review the story's plot as a whole group. **Independent reading/Guided reading/Lit centers** **Writer's Workshop** **Mini Lesson:** Prepare an Anchor Chart entitled, "*Buenas conclusiones."* Model writing a personal narrative about a time visitors came, use a simple ending such as, "*Y se fueron. El fin."* Read aloud: *Vinieron los parientes* (Cynthia Rylant). After reading, notice the strong and interesting ending. Ask students to suggest more interesting endings for your narrative. Write ideas for good endings on the chart paper. Select one to rewrite your ending with the help of students. If students get stuck thinking of good endings, have ready some previous read alouds from this unit and re-read the endings for inspiration. **Student Writing:** Students will revise their ending from the narrative they wrote on day 4 to make it more interesting. For advanced students, encourage them to select a new topic to develop and write a good ending. **Close Reader's & Writer's Workshop:** Do a whip around share of the good endings students wrote today. Add new ideas to the Anchor Chart.

APPENDIX E

WEEK FOUR LEARNING PLAN

Week Four Learning Plan

WEEK FOUR	
Math	**Social Studies & Language Arts**
Overview: This week students will be introduced to the symbols +, =. Students will explore the various ways to express numeric equations including those with missing addends. Students will solve story problems that emphasize the use of doubles and doubles plus 1. The focus standard this week is determine if equations involving addition are true. Students will use math to solve real life problems in cooperatives groups. **Essential Question**: How does math help you solve real life problems? **Vocabulary**: símbolo, equivalencia, más, igual a, dobles, justicia, review vocabulary from weeks 1-3 **Centers**: *¿Qué falta?* *Juego de ecuaciones verdaderas o falsas* *Supera la suma* *El juez y la báscula* *El tesoro*	**Overview**: This week students will present their personal narratives. Students will compare and contrast their history to that of peers. The focus standard this week is *the differences and similarities of cultures around the world are attributable to their diverse origins and histories, and interactions with other cultures throughout time (1.4.2.4.1).* Students will learn about how the past influences the present. **Essential Question**: How does the past influence the present? **Essential Question**: How are punctuation marks, grammar, and conventional spelling like highway signs and traffic signals? **Vocabulary**: diferente, similar, comparar **Read alouds:** *Am I a Color Too?* (Heidi Cole and Nancy Vogl) *Black is Brown is Tan* (Arnold Adoff) *Stellaluna* (Janell Cannon) *Family, familia* (Diane Gonzales) *Poemas para soñar juntos* (Francisco X. Alarcón) *It's Our World Too!* (Phillip Hoose) *I Am America* (Charles R. Smith)
DAY 1	
CO: I can define the word equivalency. **Whole group** **Word problem of the day:** *Hay 12 marcadores en la mesa Argentina. 5 marcadores son rojos y los demás son azules. ¿Cuántos marcadores son azules? Hay __ marcadores azules.*	**CO:** I can retell key details from a fictional text. **CO:** I can use punctuation marks in my narrative. **CO:** I can participate in the writing process: ideas, drafting, editing, revising, and publishing. **Reader's Workshop**

Interactive model math center: El juez y la báscula

To play a set of double six dominoes, game board, and a balance are needed. First players put a random domino in the center of the game board, this is the judge's domino. Players take turns selecting a face-down domino and determining if the total number of dots is equal or unequal to the "judge's" domino. If the domino is unequal the player decides if it is more or less, and places the domino in the correct section of the game board. Players use the balance to double check equivalency by putting unifix cubes matching the total of the judge's domino on one side, and unifix cubes matching the total of their domino on the other side.

Independent work

All students will practice math centers in pairs. Differentiate by giving only dominos with smaller values to scaffold down. To increase the rigor, have students determine how much more or less their domino is worth. When done, they will select a different math center for review and practice.

Guided Math

Meet with groups A&B

Equivalency posters: Prepare a variety of manipulatives for this activity including: coins, counters, stamps, toothpicks, number cards, number bonds, 10 frames, and markers. Talk with the group about the meaning of "equal" have students share their understanding of what the word means. Pair students within the group and give each pair an equivalency poster. Each poster will have a different number in the corner. Pairs will work together to find as many equivalent ways to represent that number using the manipulatives provided. Some ways include: tally marks, money, pictures, equations, number bonds, and words.

After some work time, ask pairs pause and share with the group what strategies they are using so far to represent equivalent numbers. After sharing, pairs will continue to work, possibly implementing new ideas.

Close

Students will come to the carpet. Ask students to T&T about the following questions: "How did you

Mini Lesson: Create an Anchor Chart entitled, *Volver a contar.* Draw a plot mountain with space for beginning, middle, and end. Review reasons for retelling.

Read aloud: *Am I a Color Too?* (Heidi Cole and Nancy Vogl). After reading, give one retelling plot mountain (*Mapa de la narrativa)* to each student. Students will draw and write about the plot of the book. Students may choose to work with a partner or work independently. When done, review the story's plot as a whole group.

Independent reading/Guided reading/Lit centers

Writer's Workshop

Mini Lesson: Before the lesson prepare an Anchor Chart entitled, "*Puntuacion."* (Draw a stop light), and write out one of your previously written narratives leaving out some of the punctuation.

At the beginning of the lesson play a game of Red Light, Green Light (walking) to activate prior knowledge. Tell students that punctuation is like a traffic light, it tells the reader when to stop and when to go. Without punctuation, the reader may get lost by going too fast with no stops. T&T, "What is punctuation for?"

As a class, practice editing your writing sample for correct punctuation. (For more practice, leave out punctuation in morning messages to be edited during morning meeting.)

Student Writing: Students may select a new narrative to write or revise a previously written narrative. During writing time, help students find instances where they need to add punctuation.

Students with no punctuation: Ask students to read their writing aloud to you, when they pause at the end of an idea, ask, "Red light, or green light?"

Students with too much punctuation: Read their narrative with exaggerated pauses in each place they have put a period. Then ask them to read it as it was meant to be, ask, "Red light, or green light?" when they pause.

Close Reader's & Writer's Workshop: Ask students to select a book from their book bags that they know how to read. Pair students of similar reading abilities. Students will select one of their books to read together. They will take turns reading sentences from the book. When one reader gets to a period she will say, "*Luz roja,"* and pass

know if two dominoes were equal?" "How did you know if they were unequal?" "What does it mean to be equal?" After asking each question, ask a couple students to share their thinking with the class. Record observations on an Anchor Chart entitled, "*Equivalencia -- Igual a".* **Assessment** Make notes on observations made during guided math. Exit slip 3: Complete the sentence: *"Igual a" significa* ____.	the book to her partner to read the next sentence.
DAY 2	
CO: I can determine if an equation is true or false. **Whole group** **Word problem of the day:** *Hay 20 estudiantes en la clase de la Sra. Morales. 12 van a la escuela en autobús y los demás van en carro. ¿Cuántos van en carro? Hay __ estudiantes que van en carro. Escribe una ecuación para representar esta historia.* **Interactive model math center:** Juego de ecuaciones verdaderas y falsas Players will cut out equation cards and flip them face down. Players will take turns selecting a card and determining if the equation is true or false. May use balance or other method of solving. Players will glue cards onto true/false table. **Independent work** All students will practice math centers in pairs. Differentiate by having 3 different levels of difficulty in equations. Students may select the difficulty level that they feel is best for them. When done, they will select a different math center for review and practice. **Guided Math** Meet with groups C&D **Equivalency posters** (see Day 1 Guided Math) **Close**	**CO:** I can retell key details from a fictional text. **CO:** I can use capital letters correctly in my narrative. **CO:** I can participate in the writing process: ideas, drafting, editing, revising, and publishing. **Reader's Workshop** **Mini Lesson:** Create an Anchor Chart entitled, *Volver a contar.* Draw a plot mountain with space for beginning, middle, and end. Review reasons for retelling.. Read aloud: *Black is Brown is Tan* (Arnold Adoff). After reading, give one retelling plot mountain (*Mapa de la narrativa)* to each student. Students will draw and write about the plot of the book. Students will work independently today. Use this retelling chart as a formative assessment. **Independent reading/Guided reading/Lit centers** **Writer's Workshop** **Mini Lesson:** Before the lesson prepare an Anchor Chart entitled, "*Letras mayúsculas."* (Draw a stop light), and write out one of your previously written narratives leaving out some of the capitalization. Teach the song with hand gestures: *"Frases completas"* (tune of Frere Jacques): *Frases completas, frases completas. Yo puedo hacer. Yo puedo hacer. Primero es mayúscula, espacio entre palabras, y punto al final, y punto al final.*

Students will come to the carpet. Ask students to T&T about the following questions: "How did you know if an equation was true?" "What does it mean to be equal?" After asking each question, ask a couple students to share their thinking with the class. Record any new observations on Anchor Chart from Day 2 "*Equivalencia -- Igual a".* **<u>Assessment</u>** Make notes on observations made during guided math. Exit slip 4: T/F equations	Tell students that capital letters are similar to punctuation marks, like a traffic light, they tell the reader when a new idea is beginning, or if a word is the name of something. Without capitalization, the reader may get lost and not understand the story. T&T, "What are capital letters for?" As a class, practice editing your writing sample for correct capitalization. (For more practice, leave out capitalization in morning messages to be edited during morning meeting.) **Student Writing:** Students may select a new narrative to write or revise a previously written narrative. During writing time, help students find instances where they need to add punctuation and capital letters. *Students with no capitalization:* Ask students to read their writing aloud to you, when they pause at the end of an idea, ask, "Red light, or green light?" Point to the next letter after the period, ask, "What kind of letter goes there?" *Students with too much capitalization:* Circle one or two letters that are repeatedly capitalized when they should be lower case. Look on an alphabet chart with student and ask, "Do you notice a difference between your letter and this letter?" Once student corrects one letter, ask him to look for other places where the same letter needs to be changed. **Close Reader's & Writer's Workshop:** Author's chair--select students who are interested in sharing their writing to sit in the "Author's Chair" and read their writing to the class. Put writing on document camera to display use of capitalization and periods.
<u>DAY 3</u>	
<u>CO</u>: I can write equations. **<u>Whole group</u>** **Word problem of the day:** *Hay 12 amigos jugando tag en el parque. Algunos más quieren jugar. Ahora hay 18 amigos jugando tag. ¿Cuántos amigos se juntaron al juego? Escribe una ecuación para representar esta historia.* **Interactive model math center:** Supera la suma Players take turns rolling two dice and adding the	**<u>CO:</u>** I can retell key details from a fictional text. **<u>CO:</u>** I can collaborate in shared writing with peers to recount a personal narrative. **<u>CO:</u>** I can participate in the writing process: ideas, drafting, editing, revising, and publishing. **<u>Reader's Workshop</u>** **Mini Lesson:** Assessment

two parts to get the sum. They record the equations using the *Supera la suma* recording sheet. The player with the greater total will circle her equation and is the winner of that round. **Independent work** All students will practice math centers in pairs. Differentiate by using dice numbered 1-3, or dice numbered 1-10. When done, they will select a different math center for review and practice. **Guided Math** Meet with students struggling with the concept of equivalency based on data from exit slip on days 1 & 2. **Close** Students will come to the carpet. Post the numbers 3, 7, 10 on an Anchor Chart entitled: paper *Ecuaciones.* Ask students to write an equation using these three numbers. After a moment say, "Is there another way you could write that equation?" Give time for students to write another way. Ask students to T&T to share their equations. After a moment say, "Write a new way to write an equation with these numbers if your partner gave you an idea." Then record some of the equation ideas on the chart paper. Ask, "How do you know that equation is true?" **Assessment** Make notes on observations made during guided math.	Read aloud: *Stellaluna* (Janell Cannon) Give students a retelling map to retell the story independently. For students who struggle with writing, ask them to draw pictures and then meet with them to retell the story orally. **Independent reading/Guided reading/Lit centers** **Writer's Workshop** **Mini Lesson:** Prior to the lesson prepare a chart with a personal narrative you have been working on. Leave some mistakes in wording, spelling, capitalization, and punctuation. Model reading personal narrative slowly looking carefully at each word and thinking aloud about stop lights and capitalization. Use the Student Checklist to edit and revise narrative. Interactive model how to revise narratives in pairs. **Student Writing:** Students will work in pairs to revise and edit their personal narratives using the Student Checklist. First one student will read and look for items on the checklist, while the other student listens and confirms whether or not the elements are present. When done, partners will switch roles. **Close Reader's & Writer's Workshop:** Author's chair--select students who are interested in sharing their writing to sit in the "Author's Chair" and read their writing to the class. Put writing on document camera to display use of capitalization and periods.
DAY 4	
CO: I can solve for a missing addend. **CO**: I can use math to solve problems in my life. **Whole group** **Word problem of the day:** *Hay 8 pájaros en un árbol. Algunos más vienen. Ahora hay 13 pájaros en el árbol. ¿Cuántos pájaros vinieron? Hay ___ pájaros en el árbol. Escribe una ecuación para representar esta historia.* **Interactive model math center:** Missing addend	**CO:** I can compare and contrast my personal history to that of my peers. **Reader's Workshop** **Mini Lesson:** Seat students in two circles facing each other (inner/outer). Review the words "*igual a*" and "*diferente*" by finding one trait that is the same as and one trait that is different than the person facing you in the circle. For example, if you are both girls, that is the same. If one of you is tall and one is short, that is different. Share a few examples of your same and different qualities

card game & Missing addend story problems Missing addend card game--Students will cut out missing addend cards in pairs. The "total" cards will be placed face-down in a pile. The "part" cards will be split into two piles. One pile of "part" cards will be left face-down. The other pile of "part" cards will be split between the two players. Players will use a number bond or a part-part-total mat to play. Players will place a "total" and a "part" card face up in the number bond in the corresponding location. Then players must look in their own cards to find the other "part" to make the total. The first player to put down the correct number wins the 3 cards. Play continues until all cards are used. **Independent work** All students will practice math centers in pairs. Differentiate by creating three levels of difficulty (smaller to larger numbers) for the game. Students will select the level of difficulty that works best for them. When done, they will select a different math center for review and practice. **Guided Math** Meet with students struggling with the concept of equivalency based on data from exit slip on days 1 & 2. **Close** Students will come to the carpet. Ask students to T&T about the following questions: "What strategies helped you find the missing addend in the game?" Ask a couple students to share their thinking with the class. **Assessment** Make notes on observations made during guided math. Exit slip 5: Missing addends	with the class. Read aloud one of the Question Cards. Students will share the answer to the question with partner. Keep a tally on whiteboards of how many "same" answers and how many "different" answers you get. Rotate outer circle one person to the right and ask another question. Continue. When done have a class conversation about the following questions: -Were your answers and your partner's answers more often the same or different? -Is it OK to have different opinions and responses from your friends? -What would happen if everyone in the class were exactly the same? -In what way does it make our class community better to be different from each other in some ways? **Independent reading/Guided reading/Lit centers** **Writer's Workshop** **Mini Lesson:** Read aloud: *Family, familia* (Diane Gonzales) or *Poemas para soñar juntos* (Francisco X. Alarcón) Read the *"Dos familias"* sheet and interactive model how to fill it out independently, and then how to share and compare answers to the "Two Families" in partners. Ask, "Do you think your family is more like Aaron's family or Maria's family? **Student Writing:** Students will complete the *"Dos familias"* sheet. Come together again and tally class responses to the question: "Do you think your family is more like Aaron's family or Maria's family? Interactive model filling out the *"Somos iguales. Somos diferentes."* handout. Model how to share information about your family with a partner. Students will complete the *"Somos iguales. Somos diferentes."* sheet and compare and contrast their family to their partner's family using a Venn diagram. **Close Reader's & Writer's Workshop:** Students will present their graphic organizers to the class and share what is the same and what is different about their families using the sentence frame, *"Nuestras familias son*

	iguales/diferentes porque ____."
DAY 5	
CO: I can solve for a missing addend (focus on doubles and doubles plus 1 through story problems). **CO**: I can use math to solve problems in my life. **Whole group** **Word problem of the day:** *Hay 9 niños comiendo tacos con salsa. Algunos están comiendo tacos de pollo y algunos tienen tacos al pastor. ¿Cuántos niños están comiendo tacos de pollo y cuántos están comiendo tacos al pastor? Explica tu estrategia.* **Interactive model math center:** El tesoro To set up players need 2 game boards, a cup with 0-9 number cards, and two markers. Player A takes a number out of the cup, and doubles it. Player A finds the total on the game board, puts a dot on that spot with his color, and returns the number to the cup. Player B draws a number and doubles it. Player B may mark the new total with a dot, or "claim" another dotted space as hers by putting an X on it. Play continues until one player has 4 claimed sums in a row (horizontal, vertical, or diagonal). **Independent work** All students will practice math centers in pairs.. Differentiate by playing the game without the "holding" and "claiming" rule. Or increase the challenge by playing with the "near doubles" board. Students will select the level of difficulty that works best for them. When done, they will select a different math center for review and practice. **Guided Math** Meet with students struggling with the concept of missing addends based on data from exit slip on day 4. **Close** Students will come to the carpet. Post an Anchor Chart entitled, "*Dobles y casi dobles."* Ask students to T&T about the following questions: "How did	**CO:** I can present my family history and conclusions to my peers. **CO:** I can listen to the presentations of peers. **Reader's Workshop** **Mini Lesson:** Read aloud: *It's Our World Too!* (Phillip Hoose) and/or *I Am America* (Charles R. Smith) Reflect on what we have learned about ourselves and others. T&T about the following questions: -What did you learn about yourself by studying your family's past? -What did you learn about others by studying history? -How does your past influence your present? Students will write their responses to these questions after discussing them with peers, and sharing responses with the whole group. **Independent reading/Guided reading/Lit centers** **Writer's Workshop** **Mini Lesson:** Hold a class celebration once students have finished editing, revising and publishing their favorite personal narrative. Invite parents, grandparents, siblings, etc. to celebrate with you. Students will share their narratives in small groups with family members. Before the celebration ask parent volunteers to prepare their own short personal stories about traditions, celebrations, customs, etc. from their cultures. Invite them to share these stories with the class. Prepare a cultural snack for families to share, for example fruit with lime and tajin.

using doubles facts help you play the game?" Ask a couple students to share their thinking with the class. Record doubles facts on the Anchor Chart with student help. Write some of their reasons why doubles can help solve math problems on the chart. **<u>Assessment</u>** Quiz 3--After this quiz determine what needs to be re-taught/reinforced. Then take the following week to do further instruction and practice. When appropriate conduct the summative assessments below. Social Justice Word Problem Solving Post-Assessment	

APPENDIX F

MATH ASSESSMENTS

Pre-Assessment

Nombre: _____ Fecha: _____

Examen Unidad 3: Sumar entre 10

1. Escribe 2 **maneras** de representar 5.

5

_____

_____

2. Escribe 4 **maneras** de representar 10.

10

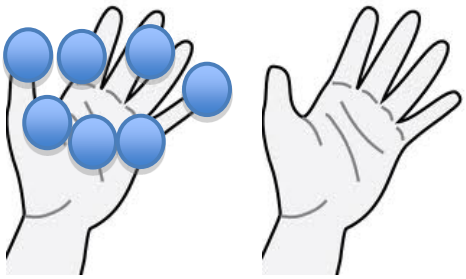
_____

_____

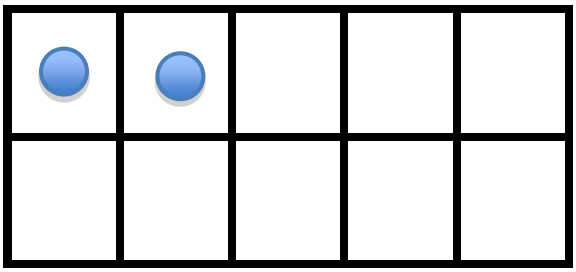
_____

_____

3. ¿Cuántos más necesitas para tener **un total de 10?**

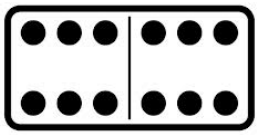


_____ más



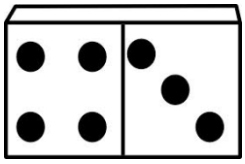
_____ más

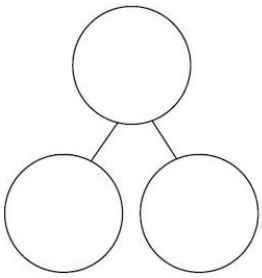
4. Completa las cajas de parte-parte-total.

Total


Total	
5	4

5. Usa el dominó para completar el enlace de números y escribir las ecuaciones.





____+____=____

____=____+____

6. ¿Qué significa "igual a"?

Igual a significa _____

7. Sumar.

6 = 3 + ____	4 + ____ = 10	5 + 5 ____	8 + 7 ____	10 + 10 ____
8 + 8 = ____	0 + 9 = ____			

8. Resuelve los problemas. Demuestra tu estrategia.

Kaelan tiene 6 aviones. Akaela tiene 3 aviones. ¿Cuántos aviones tienen Kaelan y Akaela en total? Explica cómo lo solucionaste.

Kalen y Akaela tienen _____ aviones. 

Mario tiene 4 globos. Su mamá le dio 6 globos más. ¿Cuántos globos tiene ahora? Explica cómo lo solucionaste.

Mario tiene _____ globos.

Cullen tiene 12 canicas. Algunas canicas son verdes y 5 canicas son amarillas. ¿Cuántas canicas son amarillas? Explica cómo lo solucionaste.

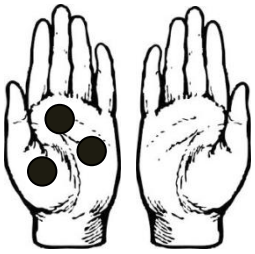
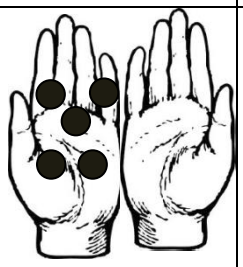
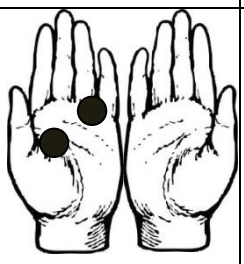
Cullen tiene _____ canicas

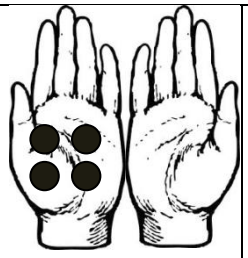
Quiz 1

Nombre: _____ Fecha: _____

Prueba 1: Maneras de hacer 5

1. ¿Cuántos más necesitas para tener un total de 5?
   Rellena la frase y representa la combinación en la tabla de base-5.

	___ y ___ son 5.	
	___ y ___ son 5.	
	___ y ___ son 5.	

	___ y ___ son 5.	

2. Sra. Morales tiene 2 gatos y 3 perros. ¿Cuántas mascotas tiene Sra. Morales en total?

3. Jaylen tiene 3 peluches. Su hermanita y le dio uno más. Luego su amigo le dio otro más. ¿Cuántos peluches tiene Jaylen ahora?

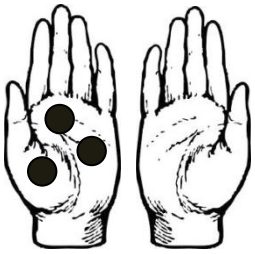
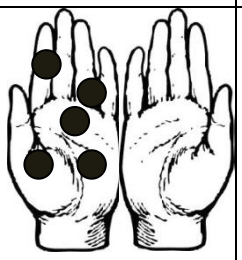
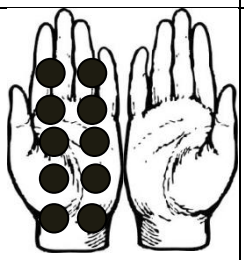
4. Jocelyn está jugando con 5 amigas en el parque. Algunas más vinieron para jugar. Ahora está jugando con 10 amigas. ¿Cuántas amigas vinieron?

Quiz 2

Nombre: _____ Fecha: _____

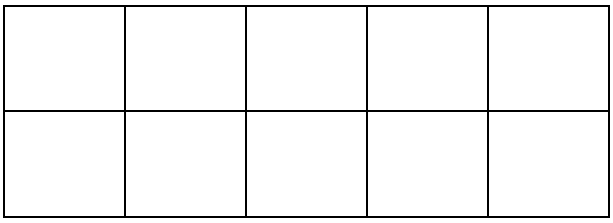
Prueba 2: Maneras de hacer 10

1. ¿Cuántos más necesitas para tener un total de 10? Rellena la frase y representa la combinación en la tabla de 10.

	___ y ___ son 10.	
	___ y ___ son 10.	
	___ y ___ son 10.	

2. Angeleyah tiene 6 muñecas. ¿Cuántas más necesita para tener 10?

Necesita _____ más.



3. Nixalee tiene 10 cubos. Algunos son verdes y algunos son anaranjados. ¿Cuántos pueden ser verdes y cuántos pueden ser anaranjados? Escribe todas las combinaciones posibles.

Quiz 3

Nombre: _____ Fecha: _____

Prueba 3: Equivalencia

1. ¿Qué significa "igual a"?

   Igual a significa _____.

2. Luis tiene 8 papitas. Luego Roberto le dio algunas papitas más. Ahora Luis tiene 10 papitas. ¿Cuántas papitas le dio Roberto?

3. Madison invitó a 12 amigos a su fiesta de cumpleaños. Luego decidió invitar a los demás amigos de la clase también. En total invitó a 18 amigos. ¿Cuántos amigos adicionales invitó?

4. Sumar.

5 + 4 = ___ ___ = 4 + 4

$$\begin{array}{r} 5 \\ +\ 6 \\ \hline \end{array}$$

6 + ___ = 12 7 + 7 = ___

10 = 3 + ___ 2 + ___ = 12

Exit Slip 1

Nombre: _____

Escribe todas las maneras posibles para hacer 5.

Escribe todas las maneras posibles para hacer 7.

Exit Slip 2

Nombre: _____

Escribe todas las maneras posibles para hacer 10.

Exit Slip 3

Nombre: _____

Completa la frase:

Igual a significa _____.

Exit Slip 4

Nombre: _____

Indica si la ecuación es verdadera (V) o falsa (F).

5 + 5 = 10 **V** **o** **F**

6 + 7 = 12 **V** **o** **F**

14 = 6 + 8 **V** **o** **F**

1 + 7 = 7 **V** **o** **F**

Exit Slip 5

Nombre: _____

Sumar.

12 + ___ = 15	13 = 10 + ___	10 = 5 + ___
9 + ___ = 18	7 = 5 + ___	2 + ___ = 10

Social Justice Word Problem Solving

Read aloud the books:

-*No Es Justo! La Lucha de Emma Tenayuca por la Justicia* (Carmen Tafolla & Sharyll Teneyuca)

-*Dolores Huerta: A Hero to Migrant Workers* (Sarah Warren)

Spanish translation: https://www.youtube.com/watch?v=uPbYH5iGHhs

Invite author Sarah Warren (http://sarahwbooks.com/**)** to visit the class and read her book and talk about how Dolores Huerta was a superhero to many people who were being treated unjustly. Warren will ask students to think about their own superhero powers and how they can use them for helping themselves and others. Students will create their own "Mini Hero Me" and write about their super powers (for example: assertiveness, honesty, leader, fair, kind, etc.)

Present problem that our school faces: There are 24* students in our first grade class. Sra. Marta, the principal, wants there to be enough books in our class so that each student can have 10 books in their book bag at a time. Currently, there are 150 books in our classroom. In a group of 3, solve the following questions:

-Do we have enough books in our classroom for Sra. Marta's goal?

-If so, how many extra do we have? If not, how many more do we need?

-What could we do to get more books in our classroom?

-Think of another problem you, our class, or our school has. What it is? What could be done to solve it?

*(*Differentiate by using smaller/bigger numbers if needed.)*

Post-Assessment

Nombre: _____ Fecha: _____

Examen Unidad 3: Sumar entre 10

1. Escribe 2 **maneras de representar** 5.

5

_____

_____

2. Escribe 4 **maneras de representar** 10.

10

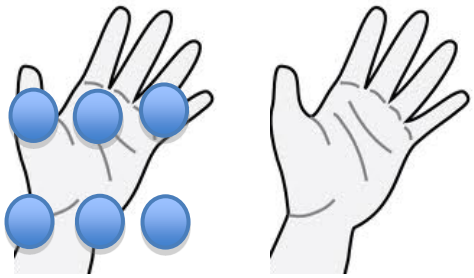
_____

_____

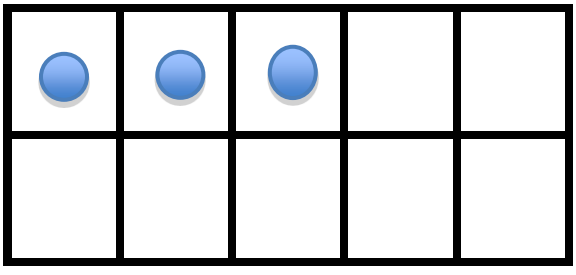
_____

_____

3. ¿Cuántos más necesitas para tener **un total de 10?**

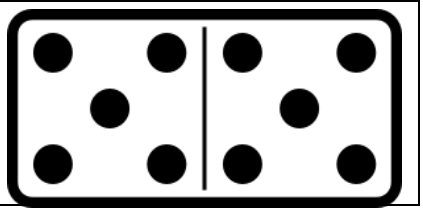


_____ más



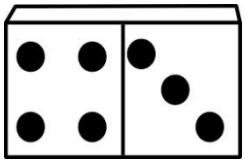
_____ más

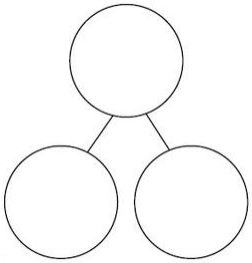
4. Completa las cajas de parte-parte-total.

Total


Total	
8	**9**

5. Usa el dominó para completar el enlace de números y escribir las ecuaciones.





____ + ____ =

____

6. ¿Qué significa "igual a"?

Igual a significa _____.

7. Sumar.

9 = 2 + ____	7 + ____ = 10	2 + 8 ____	6 + 7 ____	9 + 9 ____
7 + 7 = ____	1 + 12 = ____			

8. Resuelve los problemas. Demuestra tu estrategia.

A Roselin se le han caído 7 dientes. A Sebastian se le han caído 6 dientes. ¿Cuántos dientes han perdido Roselin y Sebastian en total? Explica cómo lo solucionaste.

Roselin y Sebastian han perdido _____ dientes.

Santiago tiene 6 Takis. Su amigo le dio algunos Takis más. Ahora Santiago tiene 12 Takis ¿Cuántos Takis le dio su amigo? Explica cómo lo solucionaste.

El amigo de Santiago le dio _____ Takis.

Nina tiene 10 flores en un florero. Algunas flores son rojas y algunas son azules. ¿Cuántas flores pueden ser rojas y cuántas pueden ser azules? Demuestra todas las combinaciones posibles.

APPENDIX G

SUPPLEMENTAL MATH RESOURCES

Week One Resources

Tablas de historias/Story Mats

Tirar hasta 5

Tira el dado. Dibuja en un color el número que tiraste. Usa otro color para representar cuantos más necesitas para hacer 5.

1. Tiré_____ . Necesito ____ más para hacer 5.

_____ más ____ son _____

2. Tiré_____ . Necesito ____ más para hacer 5.

_____ más ____ son _____

3. Tiré _____ . Necesito ____ más para hacer 5.

_____ más ____ son _____

4. Tiré _____ . Necesito ____ más para hacer 5.

_____ más ____ son _____

5. Tiré _____ . Necesito ____ más para hacer 5.

_____ más ____ son _____

6. Tiré _____ . Necesito ____ más para hacer 5.

_____ más ____ son _____

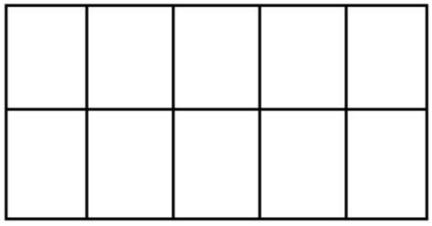
Tirar hasta 10

Tira el dado. Dibuja en un color el número que tiraste. Usa otro color para representar cuantos más necesitas para hacer 10.

1. Tiré _____ . Necesito ____ más para hacer 10.

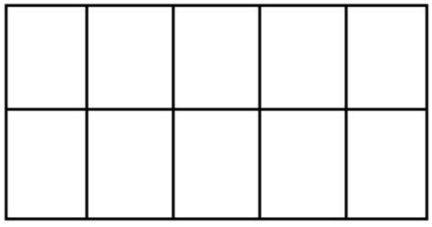
_____ más ____ son _____

2. Tiré _____ . Necesito ____ más para hacer 10.



_____ más ____ son _____

3. Tiré _____ . Necesito ____ más para hacer 10.

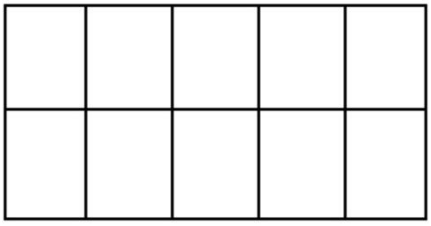


_____ más ____ son _____

4. Tiré _____ . Necesito ____ más para hacer 10.

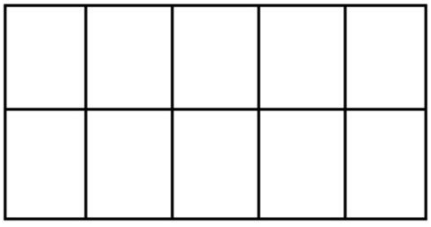
_____ más ____ son _____

5. Tiré _____ . Necesito ____ más para hacer 10.



_____ más ____ son _____

6. Tiré _____ . Necesito ____ más para hacer 10.

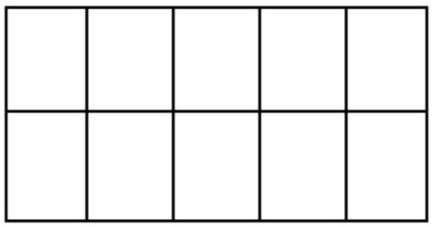


_____ más ____ son _____

Tirar hasta 20

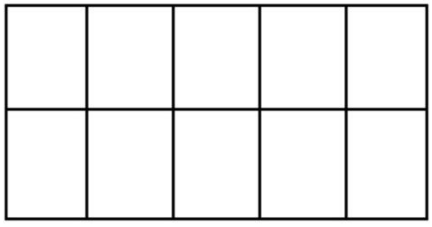
Tira 2 dados. Combina el total y dibújalo con fichas usando 1 color. Usa otro color para representar cuantos más necesitas para hacer 20.

1. Tiré _____ . Necesito ____ más para hacer 20.



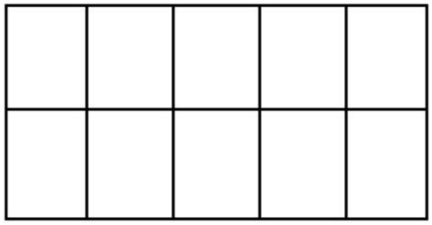
_____ más ____ son _____

2. Tiré _____ . Necesito ____ más para hacer 20.



_____ más ____ son _____

3. Tiré _____ . Necesito ____ más para hacer 20.



_____ mas ____ son _____

4. Tiré _____ . Necesito ____ más para hacer 20.

_____ mas ____ son _____

Llegar al 50/Roll to 50

LECCIÓN 2•1

Llegar al 50

Materiales

- un dado
- una ficha para cada jugador
- un tablero

Jugadores 2

Destreza Cuenta de 1 en 1

Objetivo del juego

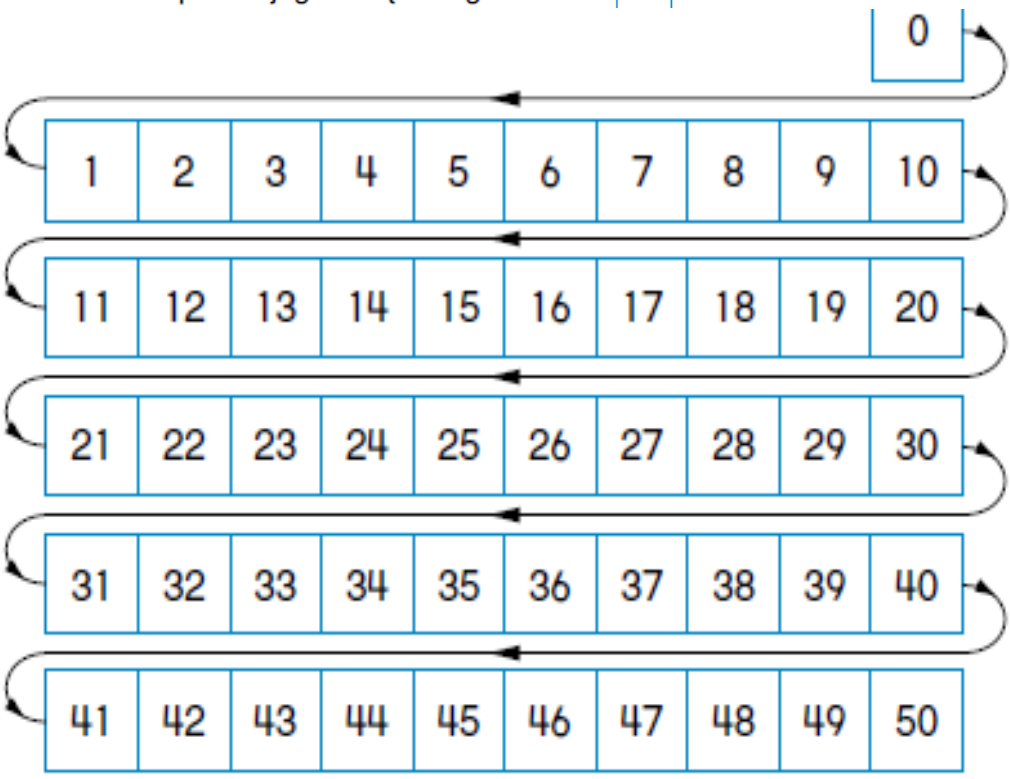
Ser el primer jugador en llegar al 50

Lanza	Espacios
1	3 adelante
2	2 atrás
3	5 adelante
4	6 atrás
5	8 adelante
6	10 adelante

Instrucciones

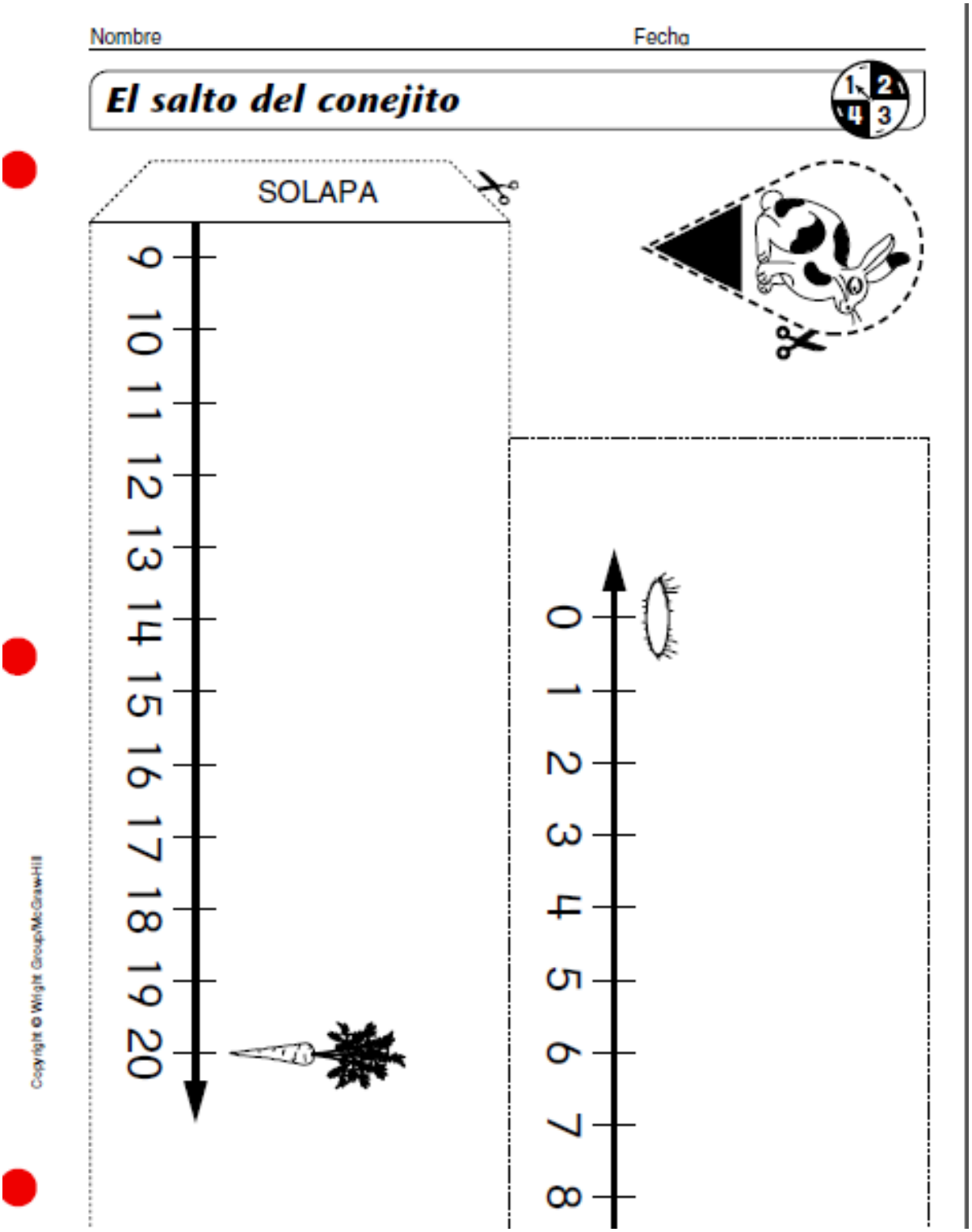
Túrnense.

1. Coloca tu ficha donde dice 0.
2. Tira el dado. Observa la tabla para saber cuántos espacios tienes que avanzar o retroceder.
3. Gana el primer jugador que llegue al 50.



(Bell, J., Bell, M., & University of Chicago, 1990)

Salta del conejito/Bunny Hop



(Bell, J. et. al, 1990)

Tabla de 10/10 Frame

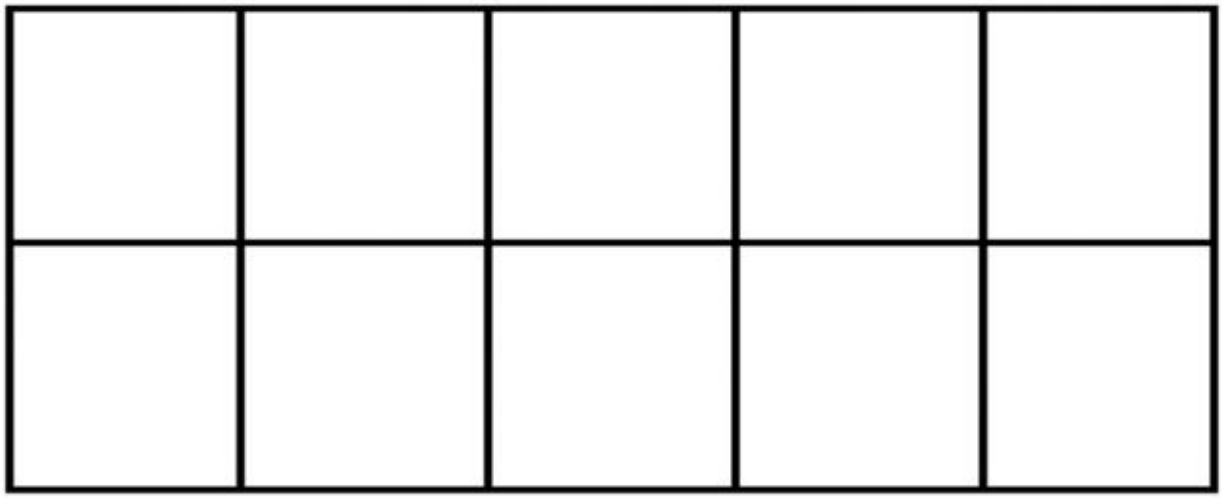
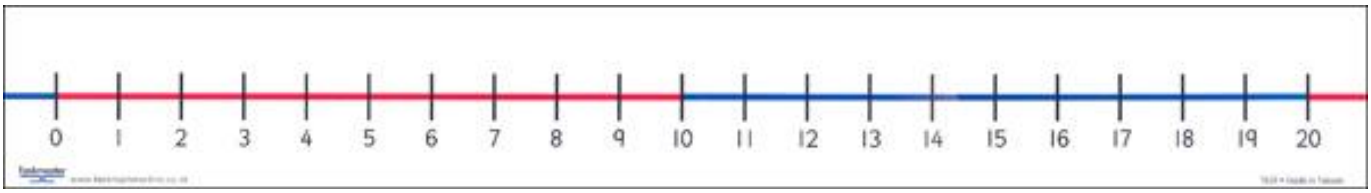
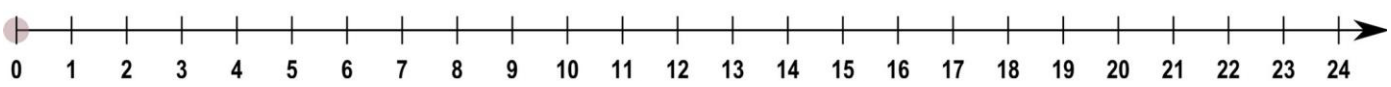


Tabla de 5/5 Frame

Recta numérica/Number Line





Cuadrícula de números/Hundred Chart

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Week Two Resources

Memoria de crear 5 (crear 10, crear 20)/Make 5 Memory (make 10, make 20)

Juego de la memoria: Crear 5

0	0	5	5
4	4	3	3
2	2	1	1

Juego de la memoria: Crear 10

10	10	9	9
8	8	7	7
6	6	5	5
4	4	3	3

2	2	1	1
0	0		

Juego de la memoria: Crear 20

19	19	18	18
17	17	16	16
15	15	14	14
13	13	12	12

11	11	10	10
20	20	0	0
10	10	9	9
8	8	7	7

6	6	5	5
4	4	3	3
2	2	1	1

Tabla de parte-parte-total/Part-Part-Total Mat

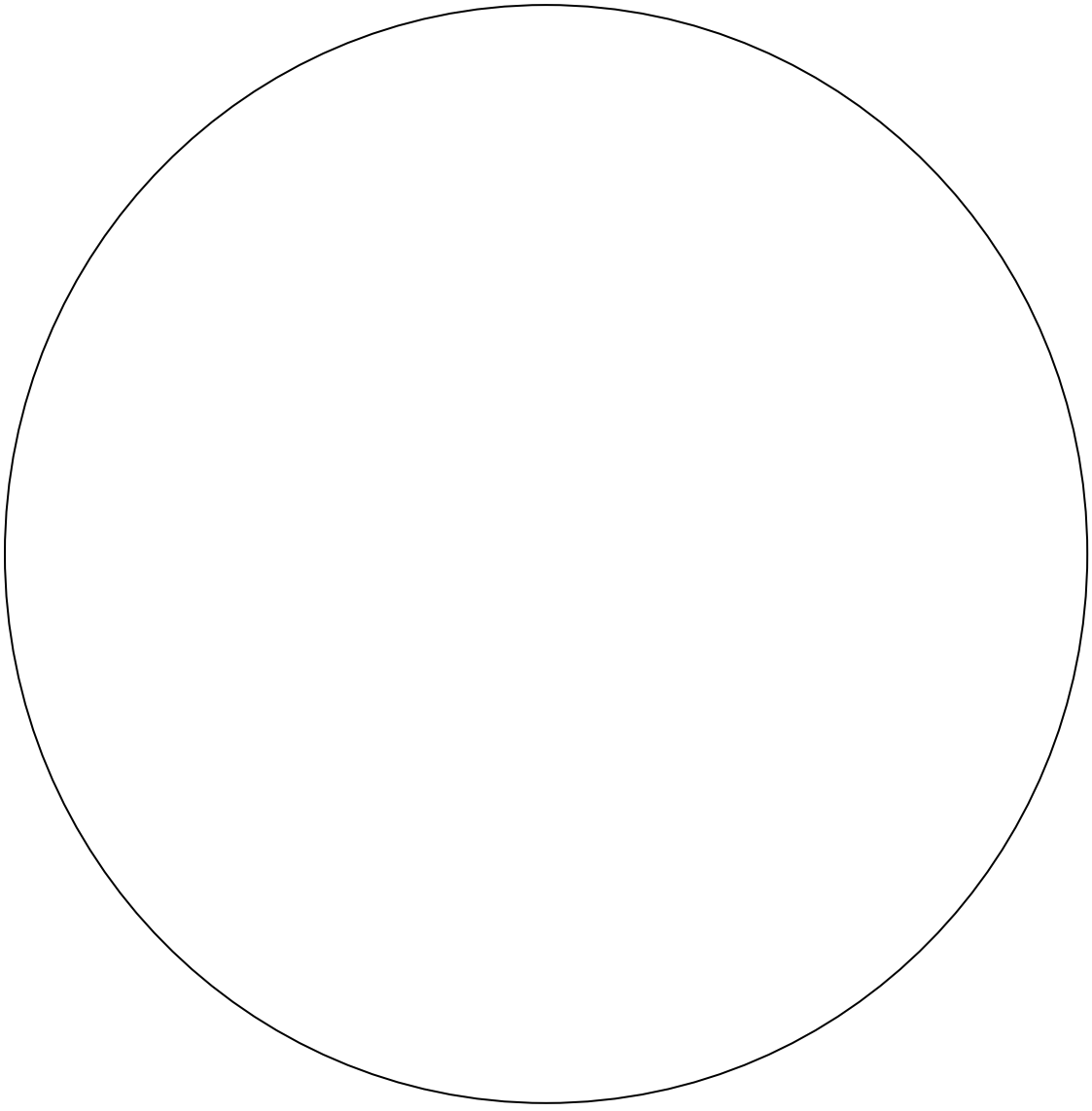
Total	
Parte	Parte

Chícharos y zanahorias/Peas and Carrots

Nombre: _____ Fecha:_____

Chícharos y Zanahorias

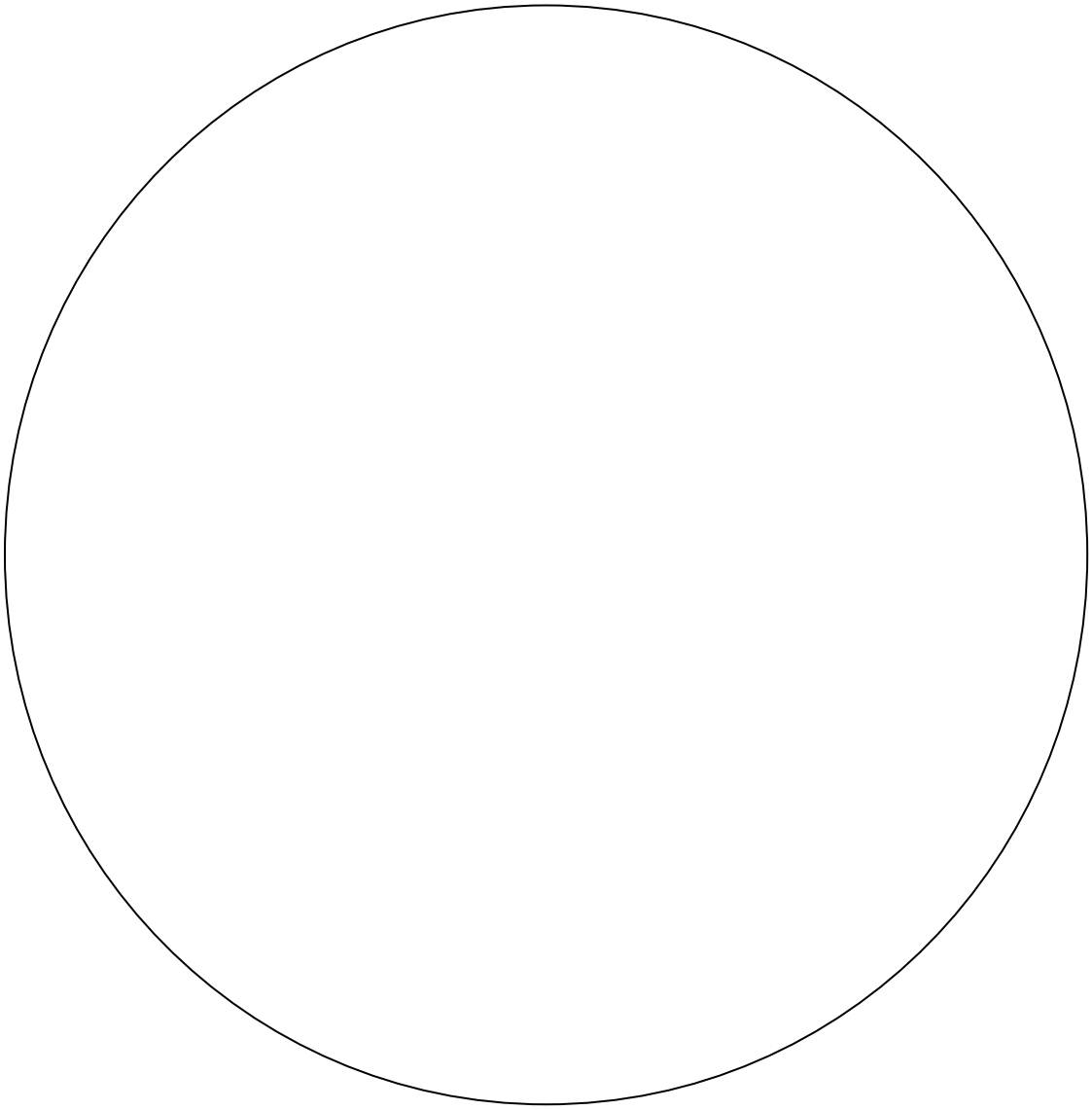
Aquí están mis combinaciones de sumar 10.



Nombre: _____ Fecha:_____

Chícharos y Zanahorias

Aquí están mis combinaciones de sumar 7.



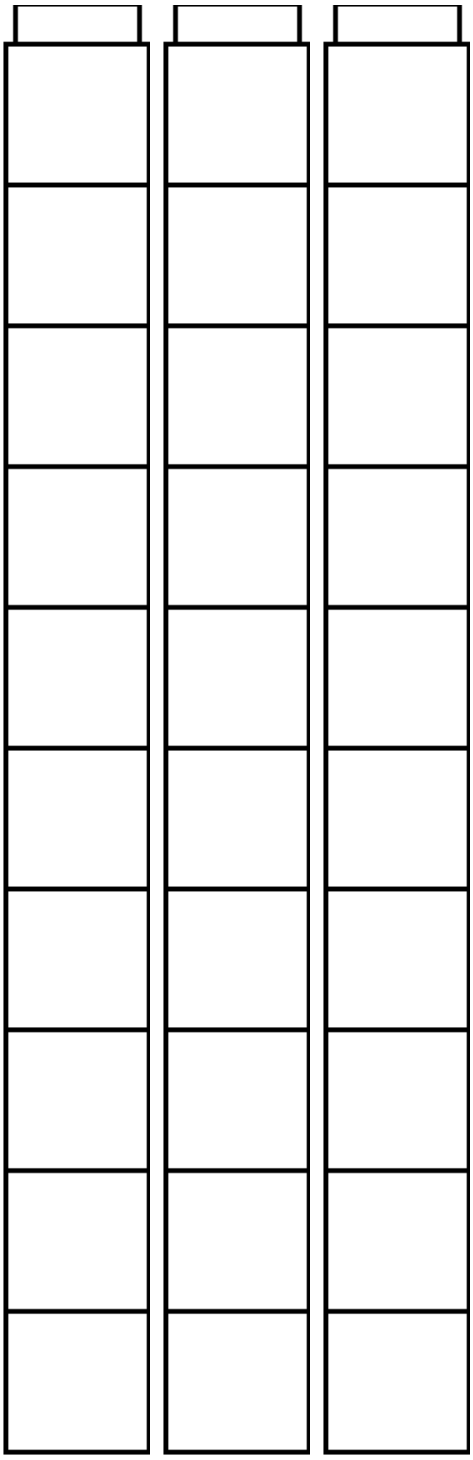
Tres torres/Three Towers

Nombre:_____

Tres Torres

Usé 2 colores de cubitos para construir 3 torres.

Cada torre tiene _____ cubitos. Aquí están mis torres.

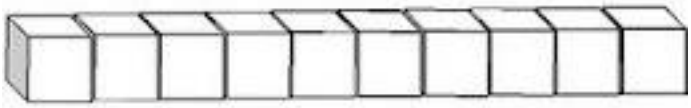


Corta y pega tus tres torres.

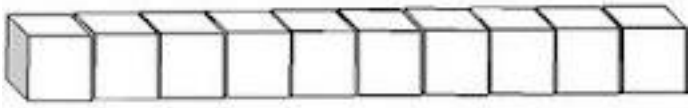
Nombre: _____

Tres Torres

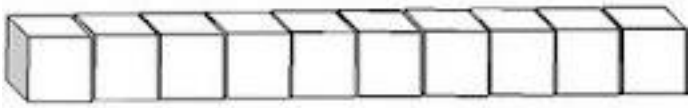
Escribe la ecuación que corresponde con cada torre.



_____+ _____ = _____



_____+ _____ = _____



_____+ _____ = _____

Week Three Resources

Tarjetas de problemas/Story Problem Cards

Recorta las tarjetas. Crea una historia de matemáticas.

(nombre)	tiene	(número)	(cosa)
(nombre)	le dio	(número)	más.
¿Cuántos tiene ahora?			

Nombres	Números	Cosas
Roselin	1	pelotas
D.J.	2	lápices
Vanessa	3	tarjetas de Pókemon
Estee	4	carritos
Amy	5	gusanos
Linden	6	Takis
Sebastian	7	pennies
Nixalee	8	libros

Moises	9	juguetes
Punghi	10	pulseras
Angeleyah	11	mariposas
Daniela	12	zanahorias

Escribir problemas/Word Problem Writing

Nombre: _____

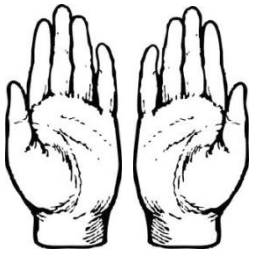
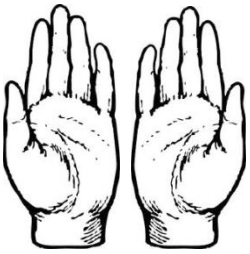
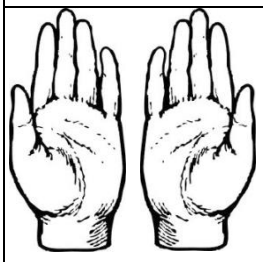
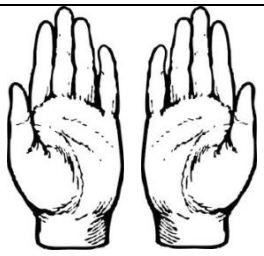
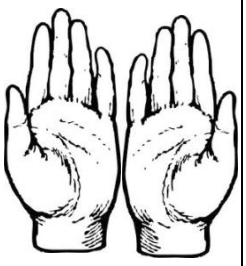
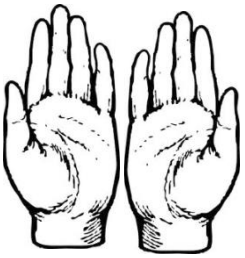
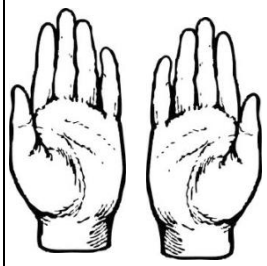
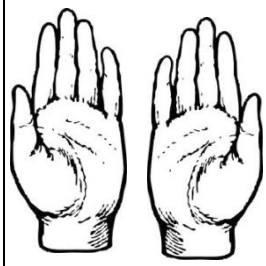
Escribe una historia de matemáticas. Haz un dibujo.

Primero _____ _____ _____ _____ _____.	
Luego _____ _____ _____ _____ _____.	
¿Cuántos _____ _____ _____ _____ _____?	

Plato-Penny/Penny-Plate

Nombres: _____

Plato-penny

	___ y ___ son 10.		___ y ___ son 10.
	___ y ___ son 10.		___ y ___ son 10.
	___ y ___ son 10.		___ y ___ son 10.
	___ y ___ son 10.		___ y ___ son 10.

4 para Anotar/4 to Score

Nombres: _____

4 para Anotar

0	6	1	3	2	4
3	2	0	8	1	5
1	7	3	2	0	6
3	0	5	1	4	2
2	4	3	0	3	1
5	1	2	9	7	0
0	6	1	4	2	3
8	2	0	5	1	4
1	7	4	2	0	6
4	0	3	1	5	0

Week Four Resources

Cartelones de equivalencia/Equivalency Posters

Escribe combinaciones **equivalentes** para el número **10**.

10

Escribe combinaciones **equivalentes** para el número **9**.

9

El juez y la báscula/The Judge and the Scale

mayor que

no equivalente

igual a

igual a

La juez

menor que

no equivalente

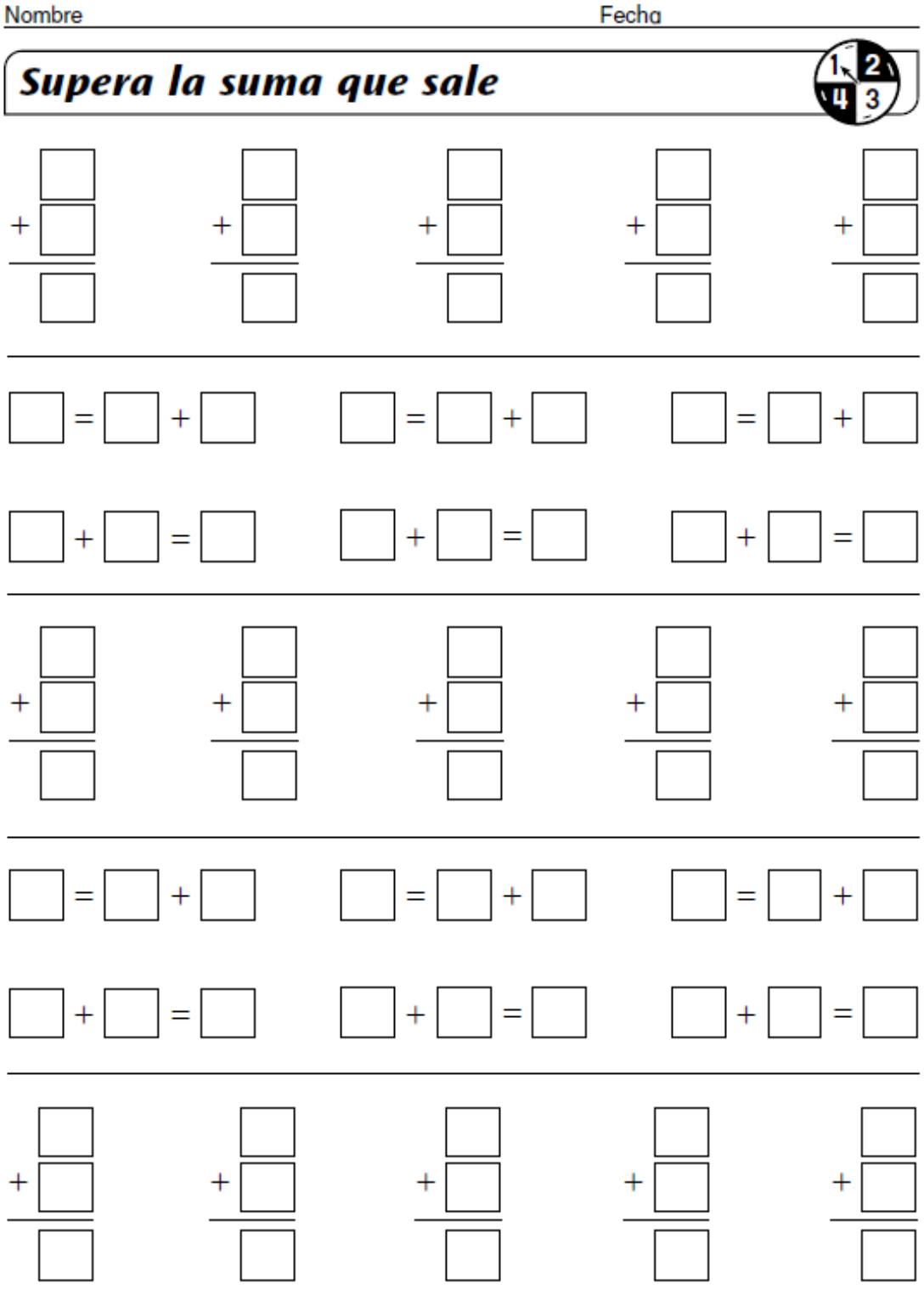
Juego de ecuaciones verdaderas o falsas/True or False Equation Game

Juego de Ecuaciones Verdaderas o Falsas

$3 = 5 + 8$	$2 = 1 + 1$	$6 = 2 + 6$
$10 = 7 + 4$	$9 = 3 + 6$	$8 = 2 + 6$
$7 = 5 + 2$	$4 = 4 + 8$	$6 = 3 + 3$
$3 + 0 = 0$	$0 + 8 = 8$	$9 = 2 + 7$
$3 + 5 = 8$	$1 + 8 = 9$	$4 + 2 = 6$
$2 + 1 = 3$	$2 + 2 = 4$	$5 + 2 = 8$
$\begin{array}{r} 5 \\ +\ 3 \\ \hline 8 \end{array}$	$\begin{array}{r} 4 \\ +\ 2 \\ \hline 6 \end{array}$	$\begin{array}{r} 0 \\ +\ 5 \\ \hline 0 \end{array}$

$\begin{array}{r} 4 \\ +\ 6 \\ \hline 9 \end{array}$	$\begin{array}{r} 6 \\ +\ 6 \\ \hline 12 \end{array}$	$\begin{array}{r} 5 \\ +\ 6 \\ \hline 11 \end{array}$
$4 = 2 + 1$	$6 + 5 = 11$	$7 + 5 = 12$
Verdadero		Falso

Supera la suma/Addition Top-It



(Bell, J. et. al, 1990)

Juego de la parte que falta/Missing addend card game

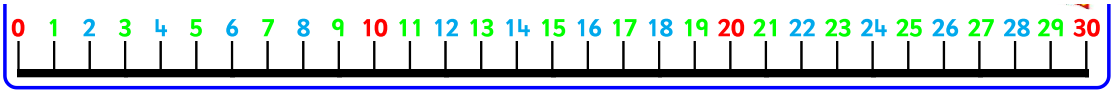
Parte	Parte	Total
4	2	6
Parte	Parte	Total
1	2	3
Parte	Parte	Total
5	5	10
Parte	Parte	Total
2	8	10
Parte	Parte	Total
3	0	3
Parte	Parte	Total
4	4	8

Parte	Parte	Total
4	3	7
Parte	Parte	Total
9	1	10
Parte	Parte	Total
10	0	10
Parte	Parte	Total
3	2	5
Parte	Parte	Total
6	6	12
Parte	Parte	Total
3	6	9

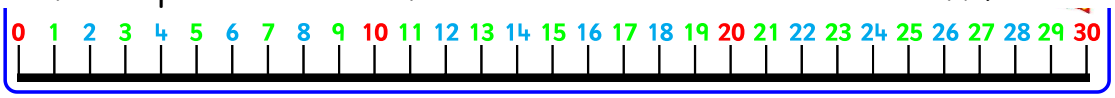
Problemas de la parte que falta/Missing addend story problems

Lee la historia. Completa el enlace y resuelve el problema.

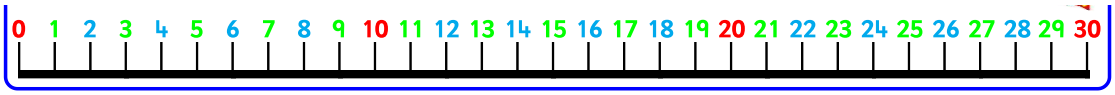
1. Hay 12 borradores en el salón. 5 borradores son nuevos y los demás no son nuevos. ¿Cuántos no son nuevos?



2. Sra. Morales tiene 15 libros. Su amiga Sra. Soriano quiere leer algunos de sus libros. Si le presta 6 a la Sra. Soriano ¿cuántos libros tendrá Sra. Morales todavía?



3. Sr. José quiere hacer 20 minutos de ejercicio. Él quiere jugar fútbol y bailar Salsa. Si juega futbol por 10 minutos, ¿Cuántos minutos de Salsa va a bailar?



4. Samaya ayudó a su mamá por 15 minutos. Ayudó por algunos minutos recogiendo su cuarto y por 5 minutos preparando la cena. ¿Por cuántos minutos recogió su cuarto?

5. Hay 9 perros en el patio. ¿Cuántos perros faltan para tener 16 en total?

6. Unas niñas están columpiando. 4 más vinieron y ahora hay 11 en total. ¿Cuántas niñas habían al principio?

7. Habían 7 dulces en una canasta. Hay 14 niños que los quieren compartir ¿Cuántos dulces faltan para tener 14 en total?

8. Javi tiene 12 amigos en total. Algunas son bilingües y otros son trilingües. Si 7 son bilingües, ¿Cuántos son trilingües?

El Tesoro/The Treasure

El Tesoro—Dobles

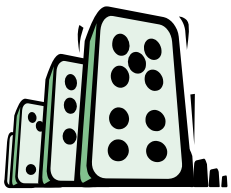
10	8	12	6	14
4	16	2	18	0
0	18	2	16	4
14	6	12	8	10
10	8	12	6	14
4	16	2	18	0

El Tesoro—Casi dobles

11	9	13	7	15
5	17	3	19	1
1	19	3	17	5
15	7	13	9	11
11	9	13	7	15
5	17	3	19	1

Supera el domino/Domino Top-It

Supera el dominó



Jugador 1 _____	Jugador 2 _____	Ganador
Total **Parte** **Parte**	**Total** **Parte** **Parte**	
Total **Parte**	**Total** **Parte** **Parte**	
Total **Parte** **Parte**	**Total** **Parte** **Parte**	
Total **Parte** **Parte**	**Total** **Parte** **Parte**	

APPENDIX H

SUPPLEMENTAL SOCIAL STUDIES & LANGUAGE ARTS RESOURCES

Mentor Text List

Estoy orgullosa de mi pasado (Amy White)
Quienquiera que seas (Mem Fox)
I look like a girl (Sheila Hamanaka)
Todos los colores de nuestra piel (Katie Kissinger)
The Skin I'm in (Lesley Harker)
We all have heritage (Sandy Lynn Holman)
Hello World (Manya Stojic)
La colcha de recuerdos (Patricia Polacco)
Pelitos (Sandra Cisneros)
Cuadros de familia (Carmen Lomas Garza)
Pepita habla dos veces (Ofelia Dumas Lachtman)
René tiene dos apellidos (René Colato Laínez)
Let's talk about race (Julius Lester)
Abuela (Arthur Dorros)
Nappy Hair (Carolivia Herron)
I love Saturdays y domingos (Alma Flor Ada)
Momma, Where are you From? (Marie Bradby)
The Blacker the Berry (Joyce Carol Thomas)
El conejito Knuffle (Mo Willems)
My Rotten Red Headed Older Brother (Patricia Polacco)
Vinieron los parientes (Cynthia Rylant)
Am I a Color Too? (Heidi Cole and Nancy Vogl)
Black is Brown is Tan (Arnold Adoff)
Stellaluna (Janell Cannon)
Family, familia (Diane Gonzales)
Poemas para soñar juntos (Francisco X. Alarcón)
It's Our World Too! (Phillip Hoose)
I Am America (Charles R. Smith)

Week One Resources

Cuestionario familiar/Family Questionnaire

Unidad de la historia: Carta a las familias

¡Vamos a comenzar la unidad de la historia en las próximas semanas y nos gustaría que usted fuera una parte activa del proceso de aprendizaje! Por favor, lea las preguntas con su hijo y responder al mismo tiempo como pueda. Vamos a utilizar esta información para hacer un proyecto en clase, por lo tanto, por favor proporcione tantos detalles como sea posible.

¡Gracias por su ayuda!
Las maestras de primer grado

History Unit: Letter to Families

We will be starting on history unit in the next coming weeks and would like you to be an active part of the learning process! Please read the attached questions with your child and answer them together to the best of your ability. We will be using this information to do a project in class, therefore, please provide as many details as possible.

Thank you for your cooperation!
The 1st Grade Team

Family Questionnaire

1) My name is _____.

2) There are _____ people in my family.

3) We speak these languages in my home: _____.

4) These are other languages my parents or grandparents speak: _____

   _____.

5) **Student:** Where do you live? In what city, state and country?

   _____

   Parent(s): Where did you live? In what city, state and country?

   _____

   Grandparents: Where did they live? In what city, state and country?

   _____

6) These are the kinds of foods I eat and prepare with my family: _____

   _____.

7) **Students:** The family tradition (holidays, special meals, special celebrations, etc.) is most special to me is _____ because

   _____.

   Parents: The family tradition (holidays, special meals, special celebrations, etc.) is most special to me is _____ because _____.

8) What are three major events that have happened in your life? (Month and Year)(Examples: Move, birth/death, celebration, milestones)

9) Draw a picture, write a recipe, or attach an artifact that represents something special about your family's cultural history.

Cuestionario familiar

1) Mi nombre es _____.

2) Hay _____ personas en mi familia.

3) Hablamos estos idiomas en mi casa _____.

4) Estos son otros idiomas que hablan mis padres o mis abuelos _____

_____.

5) **Estudiante:** ¿Dónde vives? ¿En qué vecindario, ciudad, estado y país?

_____

Padre(s): ¿Dónde vivía? ¿En qué vecindario, ciudad, estado y país?

_____

Abuelos: ¿Dónde vivían? ¿En qué vecindario, ciudad, estado y país?

_____

6) Estas son las comidas que preparo y como con mi familia _____

_____.

7) **Estudiante:** La tradición (días festivos, comidas especiales, celebraciones especiales, etc.) familiar más especial para mí es _____

porque _____.

Padres: La tradición (días festivos, comidas especiales, celebraciones especiales, etc.) familiar más especial para mí es _____

porque _____.

8) ¿Cuáles son los tres grandes acontecimientos que han sucedido en su vida? (Mes y año) (Ejemplos: mudanza, nacimiento / muerte, celebración, parteaguas)

9) Dibuja un dibujo, escribe una receta, o anexa un artefacto que representa algo especial acerca de la historia cultural de tu familia.

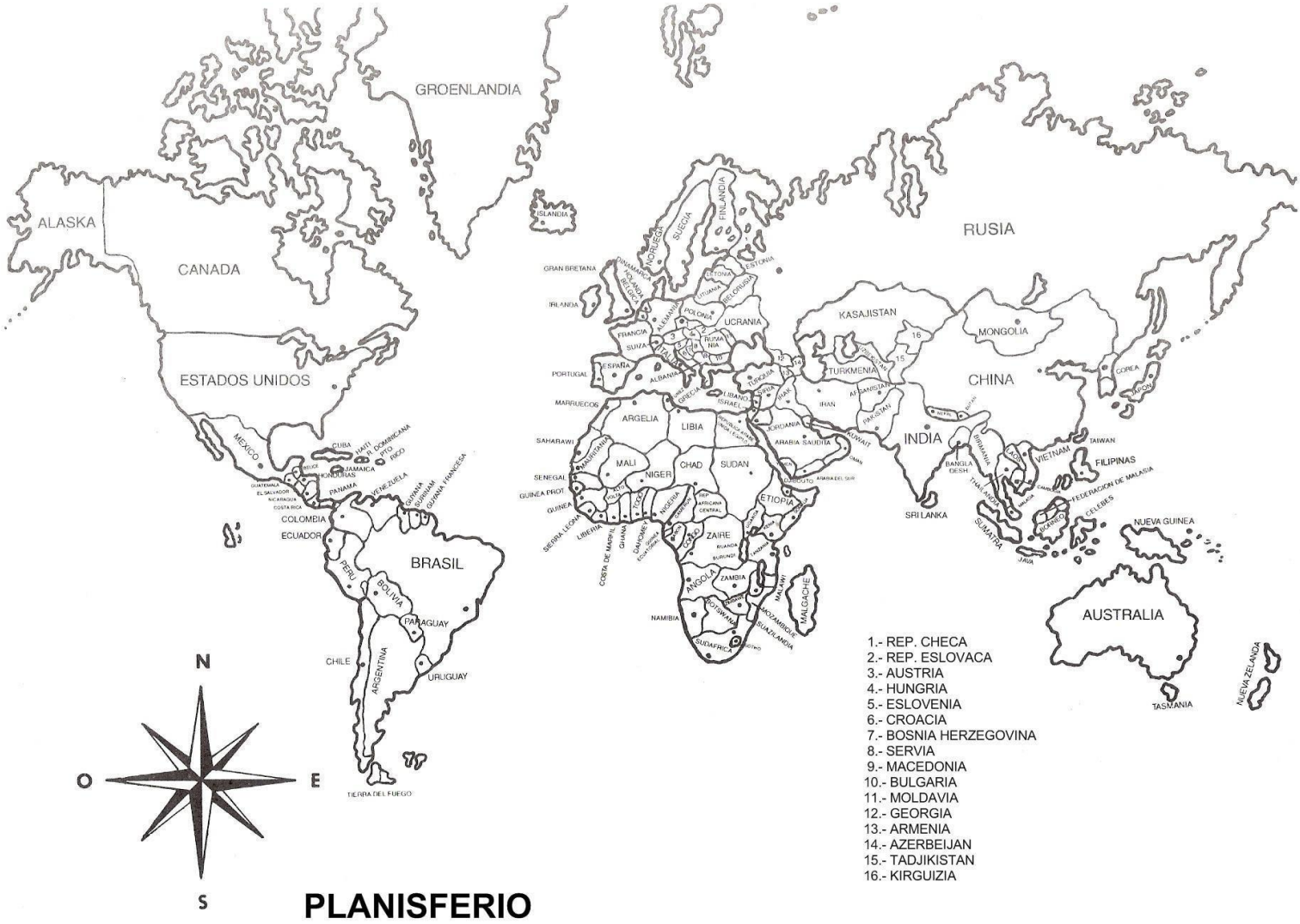
Week Two Resources

Libor de la historia de mi familia/Family History Book

La historia de mi familia

Por: _____

Mis antepasados en el mapa



PLANISFERIO


CANADA
WASHINGTON
OREGON
CALIFORNIA
IDAHO
NEVADA
MONTANA
WYOMING
UTAH
ARIZONA
COLORADO
NUEVO MEXICO
DAKOTA DEL NORTE
DAKOTA DEL SUR
NEBRASKA
KANSAS
OKLAHOMA
TEXAS
MINNESOTA
IOWA
MISSOURI
ARKANSAS
LOUSIANA
WISCONSIN
ILLINOIS
MISISSIPI
MICHIGAN
INDIANA
OHIO
KENTUCKY
TENESSE
ALABAMA
GEORGIA
FLORIDA
VIRGINIA OCCIDENTAL
VIRGINIA
CAROLINA DEL NORTE
CAROLINA DEL SUR
PENSILVANIA
NUEVA YORK
MAINE
VERMONT
NEW HAMPSHIRE
MASSACHUSETTS
BOSTON
CONNECTICUT
FILADELFIA
DELAWARE
BALTIMORE
GOLFO DE MÉXICO
BAHAMAS
ESTADOS UNIDOS


SONORA
Hermosillo
CHIHUAHUA
Chihuahua
COAHUILA
GOLFO DE MÉXICO
BAJA CALIFORNIA SUR
GOLFO DE CALIFORNIA
SINALOA
Culiacan
La Paz
DURANGO
Durango
ZACATECAS
Monterrey
N. LEON
Saltillo
TAMAULIPAS
C. Victoria
NAYARIT
AGUASCALIENTES
S.L.P.
S.L.P
Tepic
GUANAJUATO
QUERETARO
HIDALGO
JALISCO
Pachuca
MEXICO
Morelia
Toluca
TLAXCALA
Jalapa
COLIMA
MICHOACAN
MORELOS
PUEBLA
VERACRUZ
GUERRERO
Chilpancingo
OAXACA
TABASCO
Villahermosa
Tuxtla Gutierrez
CHIAPAS
CAMPECHE
Campeche
Merida
YUCATAN
QUINTANA ROO
Tulum
OCEANO PACIFICO
REPUBLICA MEXICANA


México
Belice
Guatemala
Honduras
El Salvador
Nicaragua
Costa Rica
Panamá
Colombia
Mar Caribe
Océano Pacífico

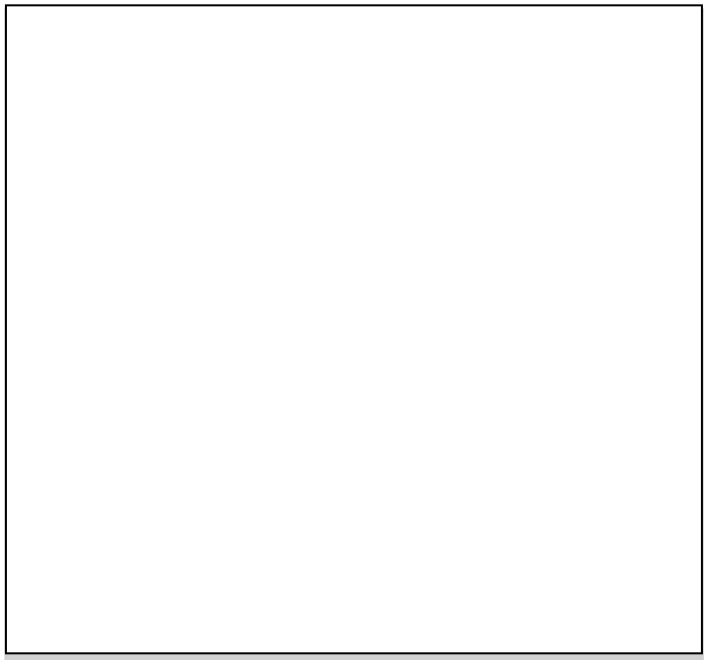
Las banderas de mi familia

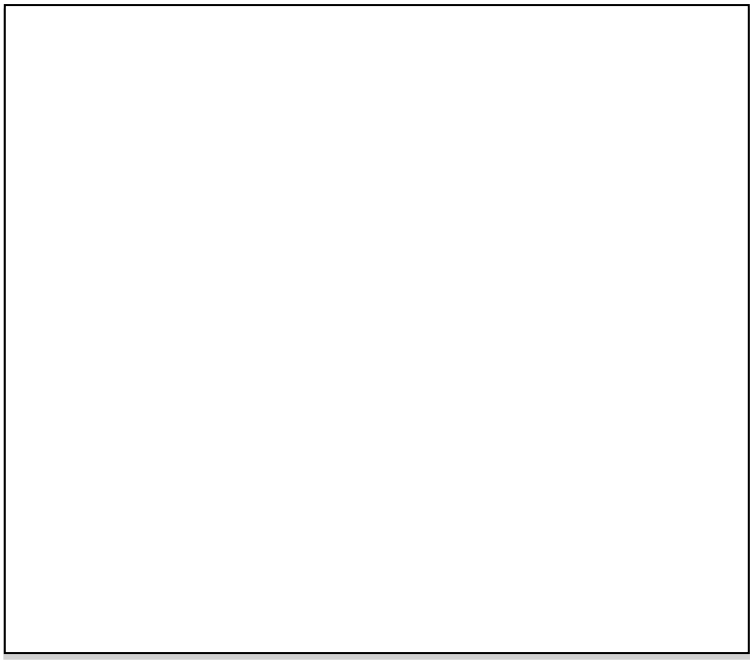
Los idiomas de mi familia

¿Cómo se dice "hola" en los idiomas que tu familia habla?

La comida de mi familia

Las celebraciones de mi familia





Retrato Familiar

La búsqueda de familias

Nombre: _____

No tengo hermanos ni hermanas.	Vivo con **un** adulto.	Tengo más de 3 hermanos y hermanas.
Vivo con mis abuelos.	Tengo una madrastra o padrastro.	Mi familia viene de otro país.
Hay diferentes razas en mi familia.	Vivo con dos padres.	Vivo con personas que me aman.

Cosas que he hecho/Things I Have Done

Cosas que he hecho

Celebraciones de cumpleaños	Tradiciones en el invierno	Tradiciones en el verano
Cosas que hago con mi familia	Días festivos	Lugares a donde he ido
Otras memorias	Memorias con mis hermanos	Memorias con mis amigos

Week Three Resources

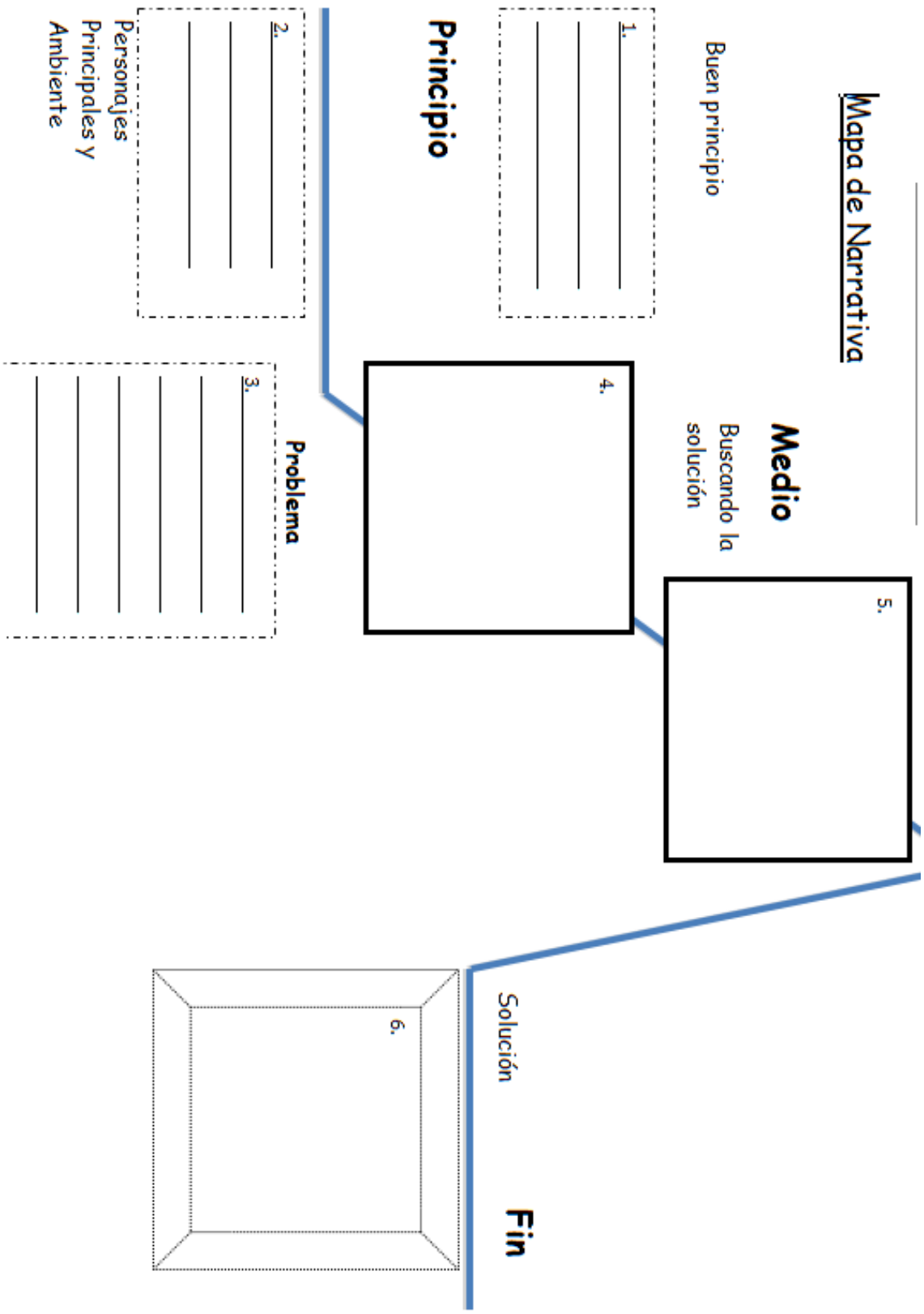
Planear mi narrativa/My Narrative Planning Sheet

Mi narrativa

Nombre: _____

Principio **Personaje, Ambiente, Problema**	**Medio** **Eventos/Acción**	**Fin** **Solución**

Volver a contar la narrativa/Narrative Retelling Sheet



Week Four Resources

Editar y revisar mi narrativa/Revising and Editing Narrative Checklist

Yo puedo editar mi narrativa.

1) Usé espacios entre palabras.

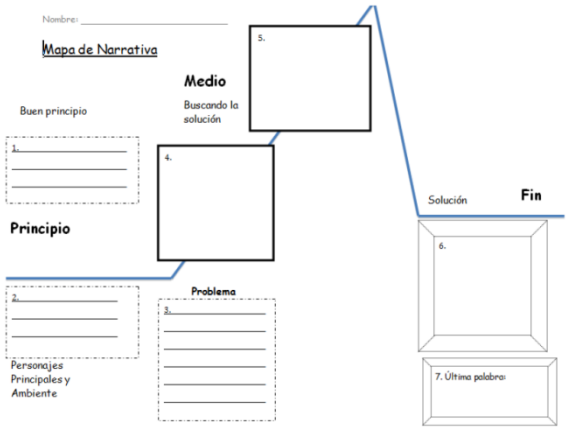
El gato tiene una cola larga .

2) Usé letras mayúsculas.

3) Usé puntos.

Yo puedo revisar mi narrativa.

- Yo escribí un **buen principio (personajes y ambiente)**.
- Yo escribí sobre **un momento** en mi vida.
- Yo escribí **2+ eventos en orden**.
- Yo usé **palabras de transición**.
- Yo escribí una **conclusión**.



Tarjetas de preguntas

¿Cuál es tu comida favorita?	¿Cuál prefieres, la primavera o el otoño?	¿Qué es algo que haces muy bien?
¿En cuál mes es tu cumpleaños?	Si solo pudieras escoger un color con que pintar, ¿cuál color escogerías?	¿Cuál es tu celebración familiar favorita?
¿Qué es algo que te gusta hacer con tu familia?	¿Cuántos hermanos y hermanas tienes?	¿Hay alguien en tu familia que es bilingüe?

Dos familias

La familia de Anika

Anika estaba triste. No recordaba si había dejado su pañuelo de la cabeza en la casa de su mama o en la casa de su papa. Los padres de Anika se divorciaron hace 3 años. Eso significa que ya no están casados, pero Anika sabe que sus padres la aman mucho. Anika desea que su papá todavía viviera con ella. Él siempre la hacía reír cuando los otros niños se burlaban de ella por usar su pañuelo de la cabeza tradicional. Ahora ni podía encontrar su pañuelo favorito. Cuando los padres de Anika se divorciaron, su papá se fue a vivir en otra casa. El año pasado, su papá se casó con una mujer que se llamaba Claudia. Su papá y Claudia acaban de tener un bebé que se llama Sami. Sami también es el hermano de Anika. ¡Es muy divertido jugar con Sami! En el departamento de su mamá Anika puede jugar con su hámster y jugar en el jardín. Su papá vive en una casa grande con un trampolín, un perro, y el bebé Sami. A Anika le encanta su familia, aun cuando vivir en dos casas se le complica encontrar sus cosas favoritas.

La familia de Carlos

Carlos está muy contento. Hoy es el día que su mamá se gradúa de la Universidad. Su mamá no podía pagar por la universidad cuando era joven, así que tenía que esperar. Carlos vive con su mamá, su abuela y su hermana Emilia. Su abuela se queda con él y su hermana mientras su mamá está trabajando y estudiando. A veces Carlos quiere ver más a su mamá, pero sabe que ella está estudiando para que pueda tener un mejor trabajo. Espera que tengan más dinero cuando consiga otro trabajo. Carlos se siente avergonzado porque su ropa y zapatos tienen huecos y no hay más dinero para comprar cosas nuevas. A veces ni tienen suficiente dinero para comprar comida. Cuando tenga un trabajo nuevo, tal vez le comprará una pelota de fútbol nueva para que pueda jugar con sus amigos. ¡Carlos no lo puede aguantar más! Su abuela siempre le dice que son ricos con el amor. Carlos va a aplaudir lo más fuerte cuando digan el nombre de su mamá en la ceremonia hoy.

1. Escribe 1 cosa que es **igual** acerca de la familia de Anika y la familia de Carlos.

_____

_____

_____

_____

2. Escribe 1 cosa que es **diferente** entre la familia de Anika y la familia de Carlos.

_____

_____

_____

_____

3. Escribe 1 cosa que es **igual** entre tu familia y una de las familias en las historias.

_____

_____

_____

_____

4. Escribe 1 cosa que es **<u>diferente</u>** entre tu familia y una de las familias en las historias.

_____

_____

_____

_____

5. Tanto Anika como Carlos se han sentido un poco triste o avergonzado por sentir diferente de los otros niños en sus escuelas. ¿Qué consejos les darías?

_____

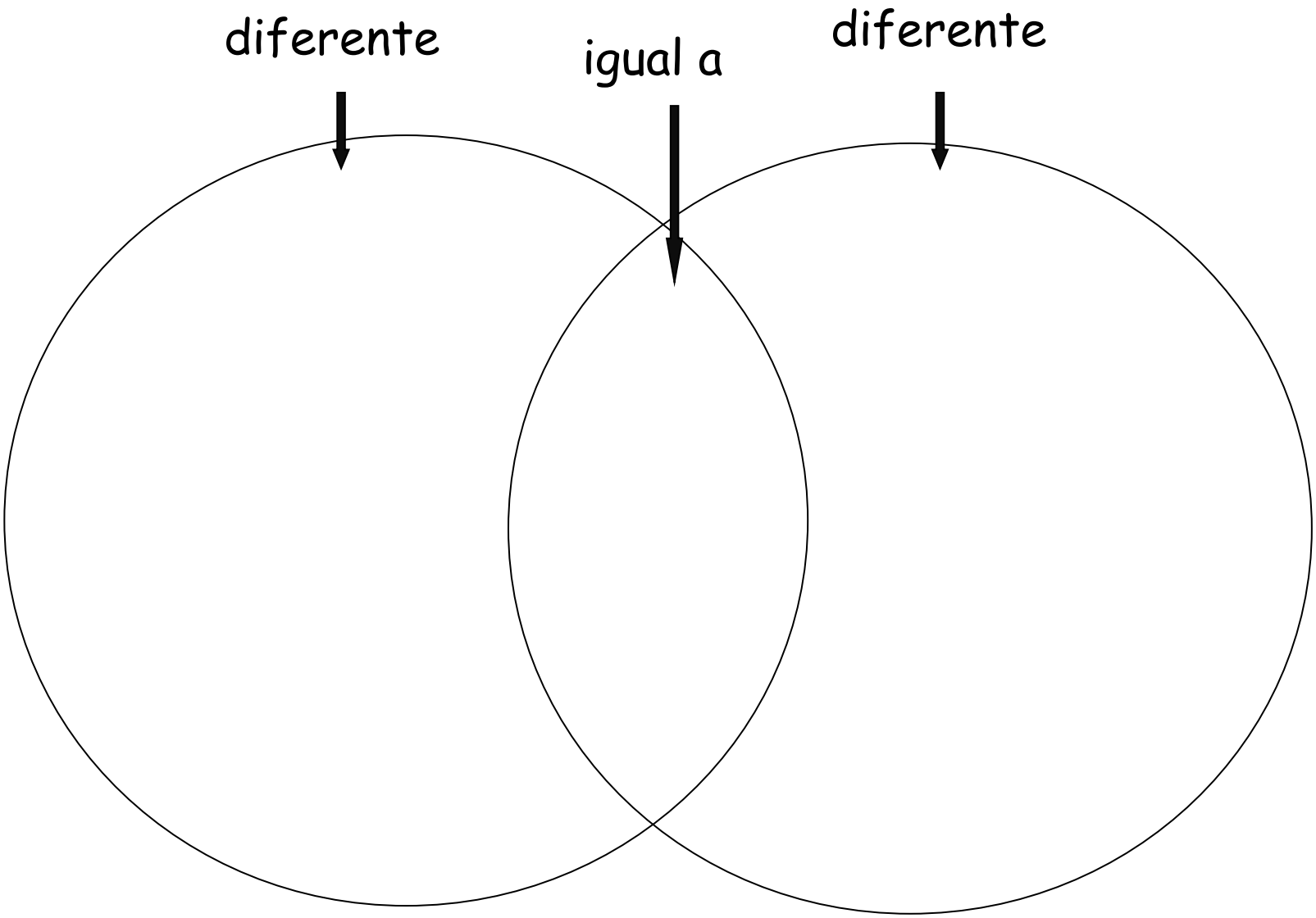
_____

_____

_____

Somos iguales, somos diferentes/We are the same, we are different

Nombre _____



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