

Grant 627

Level UP...Math Style

Paint the big picture of your project. Consider the scientific method. This is where you document your observation/s and identify the problem/s the grant will confront. Include your hypothesis helping reviewers understand the context of your request. Give the gist of the challenge, the proposed solution, expected outcomes, and how this will enhance the quality of education. Max 500 words.

The purpose of this project is to create an innovative math learning station which incorporates magnetic math manipulatives that students can use to take ownership of their learning. The 1st grade math team is requesting \$2992.31 to purchase supplies to create 5 magnetic math centers to help us "level up" our math instruction. Each learning center will include the following: a learn and store chart stand (large rolling magnetic whiteboard and stand with storage), a giant-sized set of magnetic place value blocks, an interactive magnetic calendar, a large magnetic teaching clock, magnetic coins, magnetic ten-frames, giant magnetic numbers with counters, a magnetic rek-en-rek, a variety of dice (ten frame dice, large foam dice and 12 sided dice), a magnet supply caddy, magnetic erasers and flex space floor seats. In addition to these student friendly manipulative items, grant funds would also be used to purchase picture books to help support math concepts taught. Picture books are an integral part of teaching young students so that they can make necessary connections with their learning.

Our young learners struggle with the concepts of place value (a brand new concept to first graders) algebraic relationships and problem solving. First grade is an important year to develop number sense. Students who lack a strong number sense will not have the foundation that is necessary to support learning more complex math. Our digital and technological advanced society has left a gap in student understanding of these math concepts and in opportunities for practical application and hands-on practice for the students. We want to provide our students with the tools to make math learning meaningful and allow them to explore these difficult math concepts by using magnetic manipulatives.

The Level Up- Math stations will create an opportunity for both teacher-guided and student-centered math stations to practice these key skills. These stations will not only benefit the general education population, but will allow our LEP (Limited English Proficiency Students) the opportunity to explore math by using these hands-on tools. Our LEP students are currently under performing our total student body. Each teacher on the first grade team will use their math stations for both small group instruction as well as partnered learning stations. Our key objective is to increase student learning in the first grade mathematics classroom and close achievement gaps for our Limited English Proficiency students. The project will target weak first grade TEKS in a strategically designed effort to improve overall performance and better prepare our students for 2nd grade. Demonstration of learning will be measured formatively on district assessments throughout the year and as a summative measure on the end of the year MAP (Measure of Academic Progress) testing. Last year's 2017-2018 end of the year testing data will be compared with the 2019-2020 data. Our first grade teachers are excited to start implementing this project beginning the spring of 2019 and continuing with a full year of implementation during the 2019-2020 school year.

Describe the educational need/s this project will address in terms of student data, the campus improvement plan, and districtwide goals. Use formal writing processes and do not use acronyms without identification. ex: Texas Essential Knowledge and Skills (TEKS). Grant reviewers are not necessarily from education and do not know relate to the acronyms.

Student Data: First grade is a critical grade level for developing early math concepts. These concepts are the building blocks for more difficult skills taught in later grades that are eventually tested on the STAAR (state assessment) test. The following are key TEKS (Texas Essential Knowledge and Skills) that students are responsible for learning during their first grade year:

- Use concrete and pictorial models to compose and decompose numbers up to 120 (1.2B) (Place value is introduced in 1st grade.)
- Identify and describe the value of coins (1.4 A, B)
- Create and use representations to organize, record and communicate mathematical ideas (1.1 E)
- Use concrete and pictorial models to determine the sum of multiple of 10 and a one-digit number in problems up to 99 (1.3A)
- Represent word problems involving addition and subtraction of whole numbers up to 20 using concrete and pictorial models (1.5 D)
- Tell time to the nearest hour and half hour using analog and digital clocks (1.7E)

Our 2017-2018 1st grade end of the year MAP (Measure of Academic Progress) data, shows that 23% of students scored low to low average on this assessment. Our current first graders had 17% of students scoring low to low average on the end of the year Kindergarten MAP test. This year's current first graders lowest area on the Kindergarten MAP math assessment was numerical representation (16% scored low to low average) and computation and algebraic relationships (18% scored low to low average).

Campus Improvement Plan: The TEKS listed above are the foundational skills that will be measured by the state on the 3rd grade STAAR assessment. According to our Campus Improvement Plan (CIP), Goal 2 Performance Objective 6 indicates that 95% of third graders will meet expectations on STAAR math. Our Campus Improvement Plan (CIP), Goal 2 Performance Objective 5 indicates that 90% of first graders will meet expectations on common end of the year assessment (MAP). According to last year's first grade data, we missed the mark by 13%. Without intervention, our first graders will not be prepared to handle the rigorous common assessment used in first and second grades (MAP) or the STAAR test in third grade. The gap with our Limited English Proficiency (LEP) kids is even greater. Our Campus Improvement Plan, Goal 2 Performance Objective 10 states that 90% of our LEP kids will meet expectations on STAAR. Our LEP students are currently underperforming our general population.

District Goals: Our district's mission statement and District Improvement Plan (DIP), states that "high expectations and accountability should be expected of all students". The words "all means all" shows the importance of reaching our less performing LEP students. According to the district 2nd grade Unit 1 and 2 math assessment on place value, only 69% of LEP students passed. The needs are clear. The importance of teaching foundational math skills to our early learners is critical. This project will help meet the needs of all of our students and improve student achievement.

Other: We need to change this trend by strengthening math skills of all of our students, but at the same time targeting our LEP students. According to research, LEP students need early, explicit, and intensive instruction and intervention in basic mathematics concepts and skills. The Sheltered Instruction observation Protocol (SIOP), says LEP students need to make connections between their own knowledge and experiences with new information being taught. Some LEP strategies that benefit all students are: learning from their peers, small group instruction, tactile learning, kinesthetic learning, multi-sensory learning, hands-on activities and use of manipulatives and visual aids. The Level Up-Math Style learning centers will provide for these types of instructional strategies. For example, the giant place value blocks allows tactile learning. Students are able to manipulate the magnetic pieces to represent numbers to 120. The hands-on experience keeps young students more engaged in their learning and allows for interaction with others, something worksheets and sitting at a desk doesn't provide. The picture books will allow for students to make connections, which is critical for our LEP learners.

What specific outcomes do you expect to see upon completion of your grant?

Each outcome listed should be realistic and measurable.

Include specific objectives and measurable data.

Objective 1: 95% of all first grade students will pass the place value performance assessment in math (Units 8&9). (Spring 2019-May 2020). 89% of students passed the 2017-2018 place value assessment. We will implement the Level Up? Math Style stations and spiral the instruction so that students are consistently practicing these skills. We anticipate with intentional instruction and the use of these new stations, that 95% of our students will pass this district assessment.

Objective 2: 90% of targeted subgroup LEP (Limited English Proficiency) will pass district performance assessment in place value (units 8&9). (Spring 2019-May 2020). 72% of LEP students passed the 2017-2018 place value assessment (units 8&9). By having a buddy system, using the Level-Up math stations and the use of picture books to make connections, we anticipate that 90% of our LEP will pass the place value district assessment in 2020.

Objective 3: 95% of students will pass the addition and subtraction district performance assessment (unit 5) (Spring 2019-May of 2020). 88% of students passed during the 2017-2018 calendar year. We will achieve this by using our Level Up magnetic math pieces that support this concept such as the number tiles and counters. We will also use the dice to practice our math fluency in small group instruction time. By having students warm up daily, calling out their math facts, we can increase fluency and retention of these facts.

Objective 4: 90% of targeted LEP will pass the addition and subtraction performance assessment (unit 5). (Spring 2019-May 2020). 79% of our LEP students passed the 2017-2018 test. We will achieve this by using the stations instead of boring math sheets. Students will get the opportunity to "play" mathematics and discuss mathematical concepts to increase their comprehension. The kids think they are playing with toys when in reality they are learning with magnetic tools. Engaging in meaningful conversations with non-LEP students about math and using hands-on tools are strategies that are recommended when working with LEP students.

Objective 5: The gap between student population groups of LEP students and all students achieving the master's level on first grade district assessments will be less than 10 percentage points. There is currently a 31% gap. (Spring 2019-May 2020). We will achieve this by implementing the Level Up math stations in all first grade classrooms and by having 100% of 1st grade students including the targeted LEP students using this center. Also by engaging students at the beginning of each unit using the children's

literature included in this grant. Teachers will also provide a complete list of math vocabulary words which will be displayed for each unit.

Objective 6: Increasing our overall end of the year math MAP (Measurement of Academic Progress) passing rate to 90%. (Spring 2019-May 2020). During the 2017-2018 school year, only 77% of all students passed. During a complete implementation year 2019-2020, exposing students to the hands-on magnetic manipulatives for the entire school year will decrease student mastery challenges and contribute to successful completion of the identified objectives. The specific math TEKS (skills) addressed in activities at the learning center are a significant portion of the content needed to be successful on these assessments. The spring 2019 goals/objectives stated above will be more difficult to meet because there will only be a few months to implement the new learning center. However, spring 2019 implementation is important so that the first grade team can learn and make planning adjustments for the full 2019-2020 school year. The spring 2019 implementation will help make the transition of the learning center an integral part of the first grade mathematics classroom. Using these resources will become a "normal" routine in the student learning environment. Good mathematical habits will begin to form and the student academic struggles will decrease.

What challenges do you anticipate carrying this program forward in future years?

What issues could hinder success of future students using items purchased with the grant funds?

Describe in detail the potential for expansion of this project to other grade levels and/or campuses.

How will this project continue in future years including potential cost (consider consumables)?

All first grade teachers will implement the Level UP...Math Style learning centers and integrate the resources into their math stations. With successful implementation, our vision would be to expand and add more resources the next year. Although these manipulatives are not consumable, these stations are hands-on and young children will be using the magnetic items. The loss of magnetic pieces could hinder future students using the items, but grade level money or future grants could replenish these. All pieces will be stored in bins to reduce the loss of magnetic pieces. Resources could be shared with our Kinder and 2nd grade classrooms to help support their math TEKS (Texas Essential Knowledge and Skills). Our first grade teachers would be willing to share and open their classrooms for teachers across the district to come and observe our learning centers in action.