Dear Fifth Grade Parents,   September

"What lies behind us and what lies before us are small matters compared to what lies within us."
Ralph Waldo Emerson

Welcome to the A.C.E. Program.

My name is Shayna Boyd and I am one of Western Avenue's ACE Resource teachers. I am committed to helping your child expand his/her 'gifts'/strengths, as well as developing skills to confront/overcome challenges. I am invested in your child being successful academically, socially, and, emotionally. I use a variety of strategies to address students' needs. I consider myself to be a lifelong learner searching for new ways to grow and be an even better teacher. I welcome new ideas/suggestions that will help me be the best I can be for my students, your children.

Classroom Structure:
- The ACE program implements various cooperative learning structures. These structures are beneficial to students at high academic performance levels because they improve social skills including listening, taking different perspectives, leadership, problem solving, and conflict resolution. "Cooperative learning consistently produces academic gains, improves race relations, develops social skills, educates for character, promotes self-esteem, enhances class climate, and fosters leadership and teamwork skills. " (Kagan).

Class meeting days and times:
- Reading
    - Tuesday, Thursday: 10:00-11:00
    - Monday, Wednesday: 10:00-11:00
- Math
    - Wednesday, Friday: 11:00-12:00
    - Thursday: 11:00-12:00, Friday: 1:00-2:00

Supplies:
- Composition Notebook (math students only)
- 2-Pocket Folder (one per subject)
- 1 ½ inch Binder (reading students only)
- 1 pack of looseleaf paper

Donations:
- Pencils, pens, markers, colored pencils, Kleenex, hand sanitizer

Homework:
- Homework is assigned with a purpose. We may have the children finish something that was started in school, read text, or conduct some type of research.

Goals:
- To develop the ability to be responsible for one's own learning.
- To develop the ability to understand that it is essential for human beings to work together.
- To develop the ability to demonstrate critical thinking and problem solving.
- To develop the ability to recognize and produce quality performances and quality products.
- To develop the ability to communicate effectively.
- To develop the ability to use a variety of technologies effectively and ethically.

Expectations:
- Respect the classroom environment and other points of view, opinions, and differences.
- Welcome and embrace challenges and see them as opportunities for growth.
- Be prepared for our class sessions.
- Be an active participant.

I am so happy to have your child in my class(es). It's going to be a great year!

Peace,

Ms. Shayna Boyd
ACE Resource Teacher
Western Avenue
sboyd@sd161.org
708-647-7419

Dear Families,

Welcome to the *Project M³* unit, *Record Makers and Breakers: Analyzing Graphs, Tables, and Equations*. Our class is looking forward to working with concepts of algebra, especially as it pertains to analyzing change. We will be looking at a variety of world records and may even try to set a record of our own. Throughout this unit, students will be learning algebraic concepts that will be useful not only throughout high school and college mathematics classes, but also throughout their lives.

PROJECT M³

Mentoring Mathematical Minds

In the first activity, students will be interpreting points on a graph that represent heights and average points scored for a variety of NBA players. This may be harder than it sounds because heights are represented on the *x*-axis instead of the *y*-axis. You might ask your student for a look at the NBA Star Stats graph in the *Student Mathematician's Journal* to try this yourself and/or encourage your student to create a new graph using stats from the Women's National Basketball Association. In the second lesson, students will be looking at one of the world records set by Ashrita Furman, who holds the most (and some of the craziest) world records of anyone alive. This activity looks at Furman's initial record-setting time for pushing an orange with his nose for a mile in Terminal 4 in New York's JFK airport. Students will get a chance to try a small part of this themselves as they graph and analyze the results for their own orange nose push. Later in the first chapter, students will continue to investigate and analyze graphs and tables of wacky world records. Throughout this chapter, they will be recognizing and analyzing relationships between independent and dependent variables and using graphs and tables to determine whether a situation describes constant change. During these investigations, students are constantly trying out strategies, seeing if they work, and then revising to get the correct answer. In fact, they are working just like mathematicians.

In the second chapter, students will continue to analyze change and will write recursive and explicit rules to describe constant change in additional crazy world records, such as one set by Remy Bricka walking across the Atlantic Ocean. They will expand their understanding of algebraic concepts as they analyze graphs and tables showing different rates of change and different starting points, and use proportional and algebraic reasoning to solve equations in situations involving two equations with two unknowns. Again, they will be working just like mathematicians. The unit will end with a project in which the students attempt to set their own record. Please help them in keeping track of their progress toward this record.

At the heart of all *Project M³* investigations are problem solving, reasoning, and creative thinking. When students use these mathematical practices, they think and act like mathematicians. This helps them gain a deep understanding of the mathematics and develops their mathematical talent.

I hope your child enjoys exploring this unit and the mathematical challenges it poses. I invite you to share in the discoveries your child makes by engaging in conversation around the family dinner table. You may even learn something new about algebra from your young mathematician!

Sincerely,

Sharon Boyd

Letter to Family

Dear Family:

Your child is engaged in a special language arts unit called *Patterns of Change*. The unit is designed specifically to meet the needs of high-ability students. The goals of the unit are as follows:

- To develop analytical and interpretive skills in literature

- To develop persuasive writing skills

- To develop linguistic competency

- To develop listening/oral communication skills

- To develop reasoning skills in the language arts

- To understand the concept of cyclical change in the language arts

In class we will read and discuss two novels. For the first novel, students will choose from the following: *The Watsons Go to Birmingham—1963* by Christopher Paul Curtis; *A Wrinkle in Time* by Madeleine L'Engle; *Chasing Vermeer* by Blue Balliett; *A Long Way from Chicago* by Richard Peck; *Replay* by Sharon Creech; *The Wednesday Wars* by Gary D. Schmidt; or *A Single Shard* by Linda Sue Park. The second novel, which all students will read, is *My Daniel* by Pam Conrad. We will also read high quality poems, short stories, and essays. The students will keep journals to clarify thinking and record their ideas about the works we have read. As we read the literature, we will respond to it and think critically about it by analyzing ideas, vocabulary, and structure. Specifically, we will look for similarities and differences among the works and their portrayals of cyclic patterns. Students will also conduct research and present their findings to the class. We will work as a class, in small groups, and individually on activities in this unit.

This unit includes several activities that will entail some work outside of class and may need your support at home:

- Independent reading, including the two novels

- Written homework assignments, including reading response activities and more extended writing assignments

- Individual and small group investigation on selected issues, with preparation for written and oral presentation of findings

There will be opportunities for students to work with me and other students on each of these activities as the unit progresses.

The unit will be assessed in several ways. First, a preassessment will assess skills in the language arts areas of literary analysis and writing. Second, a portfolio of writing pieces, including self-, teacher, and peer assessments of work, will document progress in writing skills. Other written activities of the unit, including graphic organizers and journal writings, will also be collected and reviewed. Finally, postassessments will demonstrate growth in analysis and writing skills. We welcome feedback and comments from you as the unit progresses.

Good curriculum and instructional practice should involve families as well as teachers. The following ideas may be useful for you to become involved with the work of the unit:

- Read the same works of literature your child is reading and discuss key ideas.

- Tell your child about events in your life that mirror events in the works we are reading.

- Hold a family debate on an issue suggested in the unit or another current issue of interest.

- Play word games to enhance vocabulary and language usage.

- Encourage your child to write every day in a diary or journal.

- Try to set up a letter-writing or e-mail arrangement with someone from another country or state in order to encourage writing on a regular basis.

- When watching movies or TV together, discuss the ideas presented with your child, and encourage close attention to how arguments are handled in the media.

- Point out examples of cycles or cyclic change that you notice, and encourage your child to do the same.

Thank you in advance for your interest in your child's curriculum. Please do not hesitate to contact me for further information as the unit progresses.

Sincerely,

Ms. Shayna Boyd

Solve It:
Focusing on Equations, Inequalities and Exponents

Goals of the Unit

In *Solve It: Focusing on Equations, Inequalities and Exponents*, students will

- Solve complex equations by using the order of operations and by combining like terms.
- Solve and graph inequalities on a number line.
- Use scientific notation to describe very large and very small numbers.
- Use rules of exponents to evaluate expressions.
- Recognize and graph quadratic and exponential functions.

Alignment with the Common Core State Standards for Mathematics

In the Course 3 *Solve It: Focusing on Equations, Inequalities and Exponents* unit, students continue their study of linear relationships as they use arithmetic properties and algebraic techniques to find solutions to linear equations. They then extend their analysis to include nonlinear relationships. Students model situations using linear equations and inequalities. Our emphasis is on understanding the concepts of equality and inequality, solution sets and graphically representing solutions. Students then investigate very large and very small numbers using scientific notation. Finally, students explore functions that do not look or act like the linear ones they previously studied. Exponential and quadratic functions provide students with an introduction to nonlinear functions. Two of the critical areas in the CCSS Mathematical Standards at Grade 8 addressed in this unit are the efficient solution of linear equations and the concept of function.

"Students strategically choose and efficiently implement procedures to solve linear equations in one variable, understanding that when they use the properties of equality and the concept of logical equivalence, they maintain the solutions of the original equation."

"Students grasp the concept of a function as a rule that assigns to each input exactly one output. They understand that functions describe situations where one quantity determines another. They can translate among representations and partial representations of functions (noting that tabular and graphical representations may be partial representations), and they describe how aspects of the function are reflected in the different representations" (CCSS, p. 52).

The continued study of algebra at this level serves three purposes. First, students solidify their understanding of the basic principles and properties of arithmetic and algebra. The following content standards from the Common Core State Standards are addressed:

- 8.EE.7. Solve linear equations in one variable.

  - Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.

The second purpose of this unit is for students to examine very large and very small numbers. The following content standards from the Common Core State Standards are addressed:

- 8.EE.1. Know and apply the properties of integer exponents to generate equivalent numerical expressions. For example, $32 \times 3^{-5} = 3^{-3} = \frac{1}{3^3} = \frac{1}{27}$.

- 8.EE.2. Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that $\sqrt{2}$ is irrational.

- 8.EE.3. Use numbers expressed in the form of a single digit times a whole-number power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other.

- 8.EE.4. Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.

Finally, students extend their understanding of algebra from linear functions to nonlinear functions. Students examine exponential and quadratic functions and apply basic solution techniques of using square roots to solve quadratic equations. The following content standards from the Common Core State Standards are addressed:

- 8.F.2. Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).

- 8.F.5. Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.