

Math 7

Lynne Spear

Course Description: Research confirms that successfully completing Algebra before high school creates a foundation for success in high school and beyond; thus, this pre-Algebra course aims to prepare students for success in Algebra 1. In Math 7, we will gather all our previous mathematical skills and understandings and expand these with algebraic tools and modes of thinking. Students will learn by completing daily (MTWTh) homework, learning to quiz themselves, showing their understanding on tests, creating a reference notebook, practicing through fine- and gross-motor movement, developing vocabulary, and sharing their learning by presenting mathematical thinking to their peers, working in small groups to create understanding, and explaining their thinking in writing.

Course Essential Questions:

- How do I show mathematical thinking in words, symbols, and images?
- What habits, attitudes and skills do I have and need to be a successful mathematician?
- How do I get unstuck when I don't know how to solve a problem?
- How does mathematical thinking permeate my everyday life?

Math 7 Units:

Dates	Unit Titles	Main Unit Tools
Q1	Interwoven Units: The Real Number System and Geometric Relationships Honors: The above plus Circles, Exponents, and Scientific Notation.	Add, subtract, multiply, and divide rational numbers (fractions and decimals); construct geometrical figures and calculate perimeter and area of composite figures. Honors: All of the above plus calculate area and circumference of circles, estimate square roots, convert repeating decimals to fractions, perform basic operations with exponential expressions and numbers in scientific notation.
Q2	Interwoven Units: Proportions and Algebraic Expressions Honors: The above plus Inequalities and Linear Equations.	Analyze proportional relationships, solve real-world and mathematical problems with ratios and proportions, create equivalent expressions. Honors: All of the above plus solve and graph inequalities; determine, interpret and apply slope, compare proportional and non-proportional relationships, write linear equations from tables & graphs.
Q3	Interwoven Units: Geometric and Algebraic Equations Honors: The above plus Linear Equations, cont., and Transformations	Create equations that define polygons and polyhedra using angle measures, area, surface area and volume; solve equations. Honors: All of the above plus determine linear vs. nonlinear functions, continue to write linear functions from tables & graphs, write linear equations; perform and describe translations, rotations, reflections and dilations.
Q4	Interwoven Units: Statistics, Probability, and Linear Equations. Honors: The above plus Systems of Linear Equations and Pythagorean Theorem	Investigate chance processes; develop, use, and evaluate probability models; demonstrate the connections between proportional relationships, lines, and linear equations. Honors: All of the above plus solve systems of linear equations by graphing and substitution; explain and apply the Pythagorean Theorem.

Homework Expectations:

I expect all students to develop a healthy homework practice of doing as many problems as possible in 30-45 minutes of uninterrupted effort every Monday through Thursday evening. "Some" every day produces deeper learning than "much" in one day. The homework is always a mix of review problems to increase speed and accuracy and new topics that gradually become more complex with each homework set. By the time students see a topic on a test, they will have practiced it many times in their homework. I give 30 problems in each homework, and students can choose what works for them; in general, all 30 is the Honors level; 20 problems is mastery, and 15, all the odds or evens, is a solid effort. I realize that students are busy humans and sometimes are not able to complete the homework they intend to complete, which is why I will accept late homework for full credit until the end of the quarter for Quarter 1, and within two-weeks for the remainder of the year. Excused absences always warrant due-date extensions. If your student is stressed in any way by the homework, please let me know so we can find a way to success. I really believe there is power in being able to do math fluently and that, with a solid practice, all students can feel this power. The way to learn math is to DO math!

Fluency:

In addition to the units above, students will demonstrate fluency with the basic math skills needed to be successful in 7th grade math and beyond. In Quarter 1 students will demonstrate mastery of multiplication facts, 0-12; long division; operations with decimals; prime factorization, LCM, & GCF. In Quarter 2 students will demonstrate mastery of converting fractions to decimals; adding & subtracting fractions; operations with integers; long division with decimals; In Quarter 3 students will demonstrate mastery of dividing with fractions; percents to decimals to fractions, including halves, thirds, quarters, fifths, eighths, and sixths; simplifying fractions; mixed numbers to fractions and back again; operations with integers; and calculating mean, median, mode, and range. In Quarter 4 students will demonstrate mastery of one-step equations; graph to table to equation; operations with integers; operations with fractions and decimals.

Honors Math 7 Option:

Students who need more challenge will participate in the Honors Math 7 option within the Math 7 class. This option requires a solid homework practice, quarterly writing assignments and a semester-long math project. Honors students will master the Math 7 concepts at a deeper level as well as explore most of the Math 8 standards. Students who complete the entire year of Honors Math 7 will have the potential to move into Algebra 1 next year. 6th graders who are taking Math 7 will be expected to complete the honors work.

Contact Information:

Lynne Spear

Cell phone: 303-588-7247; texting is my preferred communication method.

Tutoring is available by appointment most Mondays, Tuesdays, and Thursdays after school, Tuesdays during D lunch, and every morning before school with prior arrangement.

Matemáticas 7
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Descripción del curso: La investigación confirma que completar exitosamente Álgebra antes de la escuela secundaria crea una base para el éxito en la escuela secundaria y más allá; por lo tanto, este curso de pre-Álgebra tiene como objetivo preparar a los estudiantes para el éxito en Álgebra 1. En Matemáticas 7, reuniremos todas nuestras habilidades y conocimientos matemáticos anteriores y los ampliaremos con herramientas algebraicas y modos de pensar. Los estudiantes aprenderán completando la tarea diaria (MTWTh), aprendiendo a examinarse a sí mismos, mostrando su comprensión en las pruebas, creando un cuaderno de referencia, practicando a través del movimiento motriz fino y grueso, desarrollando vocabulario, y compartiendo su aprendizaje al presentar el pensamiento matemático a sus compañeros, trabajando en pequeños grupos para crear comprensión, y explicando su pensamiento por escrito.

Preguntas esenciales del curso:

- ¿Cómo puedo mostrar el pensamiento matemático en palabras, símbolos e imágenes?
- ¿Qué hábitos, actitudes y habilidades tengo y necesito para ser un matemático exitoso?
- ¿Cómo me despego cuando no sé cómo resolver un problema?
- ¿Cómo impregna mi vida cotidiana el pensamiento matemático?

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Expectativas de la tarea:

Espero que todos los estudiantes desarrollen una práctica saludable de hacer tantos problemas como sea posible en 30-45 minutos de esfuerzo ininterrumpido cada lunes a jueves por la noche. "Algunos" cada día produce un aprendizaje más profundo que "mucho" en un día. La tarea es siempre una mezcla de problemas de revisión para aumentar la velocidad y la precisión y nuevos temas que gradualmente se vuelven más complejos con cada conjunto de tareas. Para cuando los estudiantes vean un tema en un examen, lo habrán practicado muchas veces en sus tareas. Doy 30 problemas en cada tarea, y los estudiantes pueden elegir lo que funciona para ellos; en general, todos los 30 es el nivel de honores; 20 problemas es el dominio, y 15, todas las probabilidades o pares,

es un esfuerzo sólido. Me doy cuenta de que los estudiantes son seres humanos ocupados y a veces no son capaces de completar las tareas que tienen la intención de completar, por lo que aceptaré las tareas tardías para crédito completo hasta el final del trimestre para el primer trimestre, y dentro de dos semanas para el resto del año. Las ausencias justificadas siempre justifican extensiones de la fecha de vencimiento. Si su estudiante está estresado de alguna manera por la tarea, por favor hágamelo saber para que podamos encontrar el camino al éxito. Realmente creo que hay poder en ser capaz de hacer matemáticas con fluidez y que, con una práctica sólida, todos los estudiantes pueden sentir este poder. La manera de aprender matemáticas es HACER matemáticas!

Fluidez:

Además de las unidades anteriores, los estudiantes demostrarán fluidez con las habilidades básicas de matemáticas necesarias para tener éxito en matemáticas de 7° grado y más allá. En el primer trimestre los estudiantes demostrarán dominio de los hechos de multiplicación, 0-12; división larga; operaciones con decimales; factorización principal, LCM y GCF.

En el Trimestre 2 los estudiantes demostrarán maestría en la conversión de fracciones a decimales; sumando y restando fracciones; operaciones con números enteros; división larga con decimales; En el Trimestre 3 los estudiantes demostrarán maestría en la división con fracciones; porcentajes a decimales a fracciones, incluyendo mitades, tercios, cuartos, quintos, octavos y sextos; simplificando fracciones; mezclando números a fracciones y viceversa; operaciones con números enteros; y calculando la media, la mediana, el modo, y el rango. En el Cuarto Trimestre 4 los estudiantes demostrarán dominio de las ecuaciones de un solo paso; del gráfico a la tabla a la ecuación; operaciones con números enteros; operaciones con fracciones y decimales.

Opción Matemáticas 7 de Honores:

Los estudiantes que necesitan más desafío participarán en la opción de Honores en Matemáticas 7 dentro de la clase de Matemáticas 7. Esta opción requiere una sólida práctica de tareas, tareas de escritura trimestrales y un proyecto de matemáticas de un semestre de duración. Los estudiantes con honores dominarán los conceptos de Matemáticas 7 a un nivel más profundo, así como también explorarán la mayoría de los estándares de Matemáticas 8. Los estudiantes que completen el año completo de Matemáticas con Honores 7 tendrán el potencial de pasar a Álgebra 1 el próximo año. Se espera que los alumnos de sexto grado que estén tomando Math 7 completen el trabajo de honores.

Información de contacto:

Lynne Spear

Teléfono celular: 303-588-7247; los mensajes de texto son mi método de comunicación preferido.

La tutoría está disponible con cita previa la mayoría de los lunes, martes y jueves después de la escuela, martes durante el almuerzo y todas las mañanas antes de la escuela con cita previa.