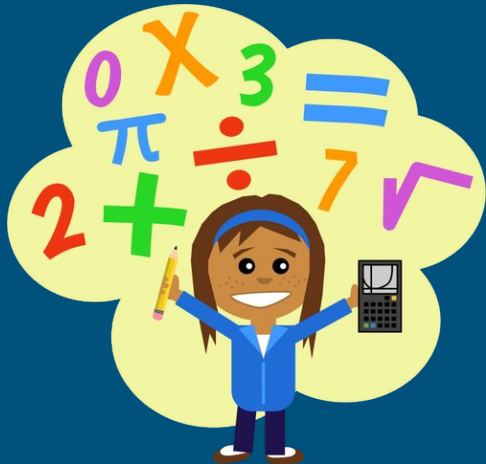
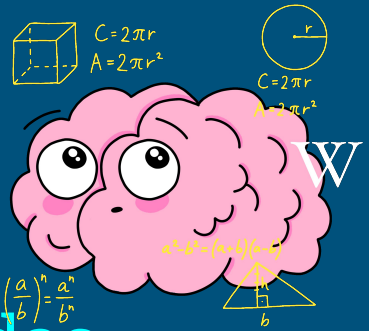


Math is Everywhere

¡Las matemáticas están en todas partes !



What research says about math:

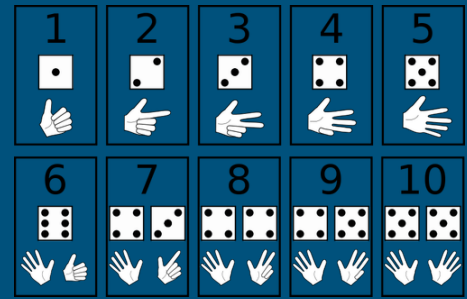
- Shift from memorizing facts to complete and conceptual understanding of the subject. (When we simply learn the rules, we forget them. When we understand the WHY, we retain the information.)
- Children need to make meaning of the math (with support and modeling from adults) themselves.
- There's more than one "right" way to solve a problem- in life and in math.

La investigación dice que en vez de memorizar las operaciones matemáticas tenemos que entender el "porqué" en las matemáticas para poder retener la información. Hay más que una manera de resolver un problema—en las matemáticas y en nuestras vidas.

Which Doesn't Belong? ¿Cuál no pertenece?



Pre-K



- Count, say number names, and match numerals to quantities (1-10)
- Compare numbers (more/less)
- Describe and compare attributes (long, short, heavy, light)
- Understand that dollars and coins represent money
- Identify and analyze 2D and 3D shapes

Pre-kinder: Conta, decir el nombre del número y emparejar los números con su cantidad (1-10), comparar números (más/menos), describir y comparar atributos (largo, corto, pesado, liviano), entender el propósito del dinero, identificar y analizar figuras bidimensionales y tridimensionales.

Kindergarten

- Know number names (1-20) and **counting** sequence
- Count to tell numbers and **compare numbers/quantities**
- Addition and subtraction within 10 (understanding part-part whole)
- Work with numbers 11-19 to gain foundation for **place value**
- Working with **shapes** to **identify, describe, classify, count, analyze, compare, create, and compose**.

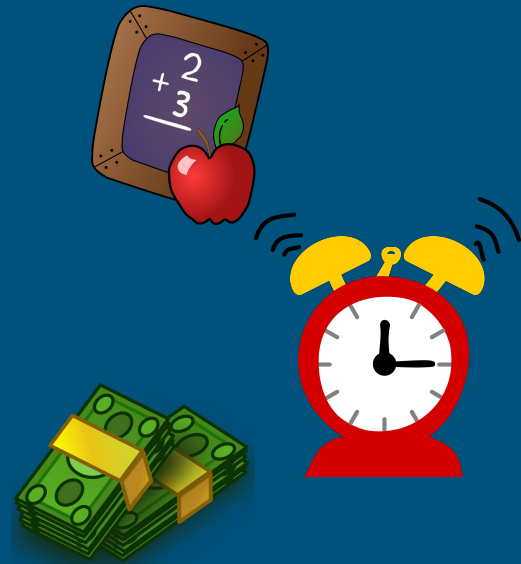


Kinder: Poder identificar, ordenar, escribir y comparar los números y cantidades del 1-20. Resolver problemas de suma y resta entre 10 (entendiendo la idea de parte-parte-entero). Poder identificar, describir, clasificar y comparar figuras



First

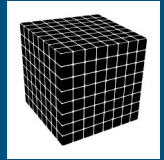
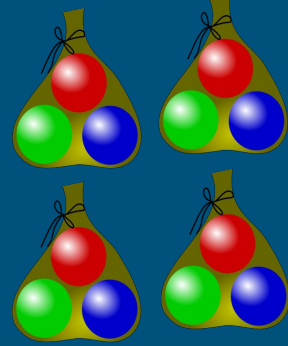
- Represent and solve **addition** and **subtraction** problems.
 - Add and subtract within 20.
- Extend the **counting sequence**.
- Understand **place value**.
- Use place value and properties of operations.
- Measure **lengths**
- Tell and write **time**
- Represent and interpret data.
- Work with **money**.



Primer grado: representar y resolver problemas de suma y resta entre 20, entender el valor posicional (unidades, decenas, centenas), y poder trabajar con la medida (longitud), el tiempo, el dinero y cómo interpretar una gráfica.

Second

- Represent and solve **addition** and **subtraction** problems.
 - Add and subtract within 20.
- Work with **equal group** of objects to get ready for **multiplication**.
- Understand place value.
- Use **place value** and properties of operations to add and subtract.
- Measure **lengths**.
- **Time** and **money**.
- Represent and interpret data.
- Reason with **shapes** and their attributes



Segundo grado: representar y resolver problemas de suma y resta entre 20, poder trabajar con grupos iguales cómo introducción a la multiplicación, usar el valor posicional (unidades, decenas, centenas) para sumar y restar y trabajar con la medida (longitud), el tiempo, las figuras y sus atributos y cómo interpretar una gráfica.

Third

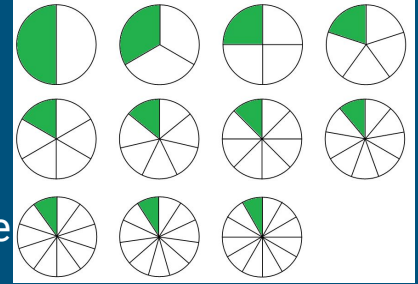
- Solve problem with multiplication and **division** problems.
- Solve problems involving the four operations
- Use **place value** understanding and properties of operations to perform multi-digit arithmetic.
- Develop understanding of **fractions** as numbers.
- Estimation of intervals of time, liquid volumes, and masses of objects.
- Represent and interpret data
- Understand concepts of **area** and **perimeter** in relation to addition.



Tercer grado: Resolver problemas de multiplicación y división, entender el valor posicional, fracciones, y estimación (del tiempo, objetos, volumen). Entender cómo representar e interpretar información/gráficas, entender los conceptos de área y perímetro.

Fourth

- Use the four operations with whole numbers to solve problems.
- Gain familiarity with factors and multiples.
- Generate and analyze patterns.
- Place value understanding for multi-digit whole numbers.
- Fractions (equivalent, compare, add, subtract, order, etc.)
- Decimals (add, compare, etc.)
- Solve problems involving measurement and conversion of measurement unit to a smaller unit.
- Represent and interpret data.
- Understand concepts of angle and measure angles.
- Draw and identify lines and angles, and classify shapes by properties of their lines and angles.



Cuarto grado: Usar las cuatro operaciones con números enteros para resolver problemas, mejorar el conocimiento de factores y múltiplos, analizar patrones, trabajar con las fracciones (comparar, ordenar, sumar, restar), trabajar con decimales, resolver problemas con medida, interpretar información/una gráfica, entender el concepto de ángulos y cómo medirlos y clasificarlos

How I Can Help At Home?

¿Cómo puedo ayudar en la casa?

- Count steps as you take a walk (in 1, 2, 5, 10s, etc.)
- Practice learning the values of coins and counting money at home.
- Cook with your child (talk about measurement, counting, fractions)
- Point out and have child patterns they see at home or outside.
- Talk about the shapes around you.
- Discuss area and perimeter of in your house, park, other places.
- Ask your child to explain the math they're learning at school
- Ask your child to explain reasoning behind math (example 9×9 is really 9 copies of 9, etc.)

Cuenta los pasos mientras caminan (de 1 en 1, 2 en 2, etc), usar monedas, cocinar juntos (enfocándose en las cantidades, la medida, las fracciones), hablando sobre patrones y figuras que vean en casa o en la calle, discutiendo el área, perímetro de su casa, el parque, etc.

¡Pregúntele a su hijx sobre lo que está aprendiendo en la clase de matemáticas en la escuela y pídale que le explique su pensamiento y razonamiento sobre la materia!

How I Can Help At Home? #2

- Look at analog clocks and discuss how we measure time (in both clock and in real life- 60 seconds, 1 minute, etc.)
- Play card or board games that involve counting and patterns
- Ask your child to count change at grocery store or estimate the cost of something.
- Compare (tallest vs. shortest, heaviest to. lightest etc.)
- Use dice or playing cards to make a game out of practicing math facts
- Count items around the house

Usando un reloj análogo, hablen del tiempo y como lo medimos (hable de cómo medimos el tiempo en el reloj y como usamos el tiempo en la vida real-60 segundos, 1 minuto, , etc.)
Jugando juegos que involucran contar y patrones.Pidiéndole a su hijx que cuente el cambio cuando están de compras o que estime el costo de algo. Pueden comparar(alto, bajo, pesado, liviano).Pueden usar dados para practicar las operaciones de matemáticas. Contando cosas alrededor de la casa.

Math Fluency: What is It?

La fluidez en las matemáticas: ¿Qué es?

- Math fact fluency is the ability to **quickly recall addition, subtraction, multiplication, and division math facts** through **conceptual learning, fact strategies, and memorization**.
- The four key components to determine mastery are :
 - Flexibility
 - Appropriate strategy use
 - Efficiency
 - Accuracy.



A yellow rounded rectangle with a black border. Inside, the equation $5+10=15$ is written in black. A red arrow points upwards from the number 15.

La habilidad de recordar (rápidamente) datos de matemáticas/operaciones de suma, resta, multiplicación y división por medida del aprendizaje, estrategias aprendidas y la memorización.

What is Mathematical Fluency?

“When we are fluent in a language, we can respond and converse without having to think too hard. The language comes naturally, and we do not use up space in our brain thinking about what word to use. Fluency comes from using the language in multiple settings, from trying things out, and failing and trying again.” – Dr. Nic, Creative Maths


$$3 + 1 =$$

Math Fluency: Why Does It Matter?

La fluidez en las matemáticas: ¿por qué es importante?

- By building fluency in math, students can efficiently use foundational skills to solve deeper, more meaningful problems that they encounter in the world around them. Fluency contributes to success in the math classroom and in everyday life.

Cuando los estudiantes desarrollan la fluidez en las matemáticas, los estudiantes pueden usar las destrezas fundamentales para resolver problemas de matemáticas más profundos que ellos encuentren a su alrededor.

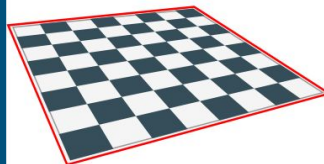
Math Fluency: How You Can Help at Home

- Digital fluency games (MOBY MAX)
- Juegos digitales



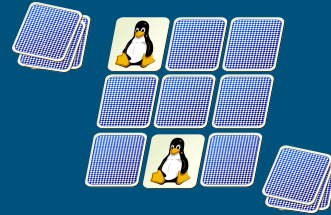
- Games
- Juegos
 - See next slide

a8	b8	c8	d8	e8	f8	g8	h8
a7	b7	c7	d7	e7	f7	g7	h7
a6	b6	c6	d6	e6	f6	g6	h6
a5	b5	c5	d5	e5	f5	g5	h5
a4	b4	c4	d4	e4	f4	g4	h4
a3	b3	c3	d3	e3	f3	g3	h3
a2	b2	c2	d2	e2	f2	g2	h2
a1	b1	c1	d1	e1	f1	g1	h1



Fluency Game Examples Ejemplos de juegos

- Puzzles
 - Match the sum with the addition sentence
 - Match the product with the multiplication sentence
- Roll dice and multiply, add, divide, etc.
- Matching cards
 - Match fractions based on models



- Usar o crear rompecabezas/tarjetas para emparejar cantidades/números.
- Lanzar dados para decir la cantidad, sumar, multiplicar

Let's Play! ¡A jugar!

Pre-K, K, 1st:

Ms. Pankratz

2nd, 3rd, 4th grade:

Ms. Martinez