



AN EARLY COLLEGE DISTRICT

BROWNSVILLE

INDEPENDENT SCHOOL DISTRICT

ELEMENTARY MATH INITIATIVE

Fact Fluency and Automaticity

Automaticity is a building block for mastering higher-level math concepts. It is essential to turning basic skills into tools for future learning, which creates an independent learner who is self-confident and successful in his or her studies. Students learn their grade level appropriate facts to the level of accuracy to then progress to math **fluency**.

Once fluency is achieved, students can then learn facts to the level of automaticity.

The Purpose of Manipulatives

The effective use of manipulatives helps students connect their mathematical thinking skills by making connections and integrating their knowledge to gain an understanding of mathematical concepts. Manipulatives are teaching tools used to engage students in the hands-on learning of mathematics. They can be used to introduce, practice, or remediate a concept.

Manipulatives provide a concrete foundation for learning abstract ideas.

Grade	Initiative
Kinder	<ul style="list-style-type: none"> - Count forward and backward to at least 20 with and without objects. Student Rekenrek - Read, write and represent whole numbers from 0 to at least 20 with and without objects or pictures. Student Rekenrek - Have number cardinality. Student Rekenrek - Compose and decompose numbers up to 10 with objects and pictures, (add and subtract up to 10). Student Rekenrek, Numbers to 100 Match-Ups, Mastering Addition Dominoes, Visualize It! Part-Whole Addition and Subtraction Cards - Recognize instantly the quantity of a small group of objects (ten or fewer) in organized and random arrangements. (in ten frames, number cubes, dominoes, etc.) Number Patterns Match-Ups, Equation Match-Ups - Recite by ones and tens up to 100 starting at any given number. Numbers to 100 Match-Ups
First	<ul style="list-style-type: none"> - Recognize instantly the quantity of structured arrangements, with ten or less items. Math Match-Ups, - Compose 10 with two or more addends with and without concrete objects. Math Match-Ups - Apply basic fact strategies to add and subtract within 20, including making 10 and decomposing a number leading to a 10. Math Match-Ups, Mastering Addition Dominoes, Mastering Subtraction Dominoes, Visualize It! Part-Whole Addition and Subtraction Cards, Addition All Facts 0-12 Flash Cards, Subtraction All Facts 0-12 Flash Cards, Addition Grab & Play Game, Subtraction Grab & Play Game - Recite numbers forward and backward from any given number between 1 and 120. Number Pattern Math-Ups - Skip count by twos, fives, and tens to determine the total number of objects up to 120 in a set. Number Pattern Math-Ups - Use the relationships to count by twos, fives, and tens to determine the value of a collection of pennies, nickels, and/or dimes.

Additional resource sites:

<https://toytheater.com/math-flash-cards/>
<https://www.factmonster.com/math/flashcards>
<http://emathlab.com/FlashCards/flashCards.php>

<https://www.math-drills.com/flashcards.php>
<https://matheasily.com/multiplication-flash-cards.html>
<https://www.splashlearn.com/>
<https://ascendmath.com/fcm/html5/>

<https://www.multiplication.com/>
<https://matheasily.com/>





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Grade	Initiative
Second	<ul style="list-style-type: none"> -Recall basic facts to add and subtract within 20 with automaticity. Grab & Play Math Games, Mastering Math Dominoes + -, Visualize It! Part-Whole Addition and Subtraction Cards, Addition All Facts 0-12 Flash Cards, Subtraction All Facts 0-12 Flash Cards -Skip count by twos, fives, tens, and twenty-fives. Math Number Patterns Match-Ups -Introduction to multiplication facts for zeros, ones, twos, fives, and tens. Multiplication All Facts 0-12 Flash Cards <div style="text-align: right;">  </div>
Third	<ul style="list-style-type: none"> -Recall basic multiplication facts up to 10 by 10 with automaticity and recall the corresponding division facts. Visualize It! Part-Whole Cards – Complete Set, Hands-On Multiplication and Division Kit, Math Equivalency Puzzles-Complete Set, All Facts 0-12 Math Flash Cards – Complete Set, Multiplication All Facts 0-12 Flash Cards, Mastering Math Dominoes – Complete Set -Solve with fluency one- and two-step problems involving + - within 1,000
Fourth	<ul style="list-style-type: none"> -Recall basic multiplication facts up to 12 by 12 with automaticity and recall the corresponding division facts. Visualize It! Part-Whole Cards – Complete Set, Hands-On Multiplication and Division Kit, Math Equivalency Puzzles-Complete Set, All Facts 0-12 Math Flash Cards – Complete Set, Multiplication All Facts 0-12 Flash Cards -Relate decimals to fractions and to money that name tenths and hundredths. $0.10 = 10/100 = 10¢$ Fraction Number Lines Write & Wipe Boards, Write & Wipe Thin-Line Markers, Mastering Math Dominoes – Complete Set -Solve with fluency one- and two-step problems involving multiplication and division <div style="text-align: right;">  </div>
Fifth	<ul style="list-style-type: none"> -Recall basic multiplication facts up to 12 by 12 with automaticity and recall the corresponding division facts. Visualize It! Part-Whole Cards – Complete Set, Hands-On Multiplication and Division Kit, Math Equivalency Puzzles-Complete Set, All Facts 0-12 Math Flash Cards – Complete Set, Multiplication All Facts 0-12 Flash Cards -Relate decimals to fractions and to money that name tenths and hundredths. $0.25 = 1/4 = 25¢$ Fraction Number Lines Write & Wipe Boards, Write & Wipe Thin-Line Markers, Mastering Math Dominoes – Complete Set

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<https://www.splashlearn.com/>
<https://ascendmath.com/fcm/html5/>

<https://www.multiplication.com/>
<https://matheasily.com/>

