Grades: Kindergarten - 4th

Family At-Home Math Guide for

Student Success

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THIS GUIDE INCLUDES Math
Activities AND Resources Connected to areas
of emphasis for each grade level.

Family At-Home Math Guide for
Student Success

Kindergarten - 4th Grade Activities

Dear Family,

You are your student's first teacher, and your support at home is essential. This mathematics-at-home plan was created as a resource for parents of students in Kindergarten through 4th grade to support and strengthen essential foundational mathematics skills. This plan includes information and resources connected to the areas of emphasis for each grade level. This resource is available in an electronic format that is accessible on the Nassau County School District website, and a hardcopy of this resource is available upon parent request.

We are happy to provide you with this Family At-Home Math Guide.

Sincerely,
Nassau County School District

Number Sense

Developing an understanding of counting, representing, and ordering objects within a set
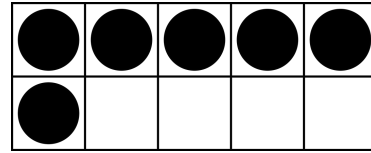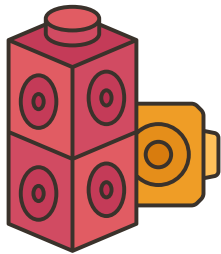
Students need to be able to....

- Represent the number of objects in a group with a written numeral up to 20.
- Given a number from 0 to 20, students will count that many objects.
- Locate and order numbers using a number line.
- Compare the number of objects from 0 to 20 in two groups using the terms less than, equal to or greater than.

Sample Response:
There are more green stars than blue stars; 8 is greater than 3.

Vocabulary to review

Greater than: term used when comparing two values where one is larger than the other

Less than: term used when comparing two values where one is smaller than the other

Equal: term used when comparing two values where both values have the same value

Number Sense Activities

- **Number Building –** Call out a number from 0–20 and ask your child to build it using blocks or any small objects. Then ask your child to write the number.

Click here for a Free Number Writing Worksheet

- **Draw a Card –** Using a deck of cards, both you and your child will choose a card. Ask your child one of the following questions:

1. What is your number?
2. Which number is greater?
3. Which number is less?

- **Number Order –** Using number cards with the numbers 0–10 or 11–20, mix up the cards. Work with your child to put the numbers in order from least to greatest.

Activities to do on the go:

- When in the car, ask your child to count the number of cars they see. For example, red cars, blue trucks, etc.
- When walking into the store, count the number of steps it takes to get from one place to another or how many items are in the cart, etc.

Free Parent Resources

Number Sense

Developing an understanding of addition and subtraction and the relationship between them
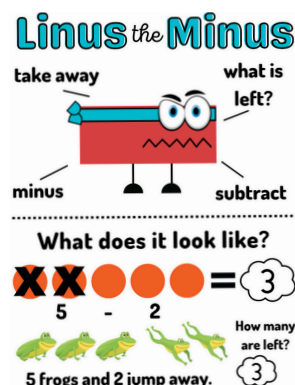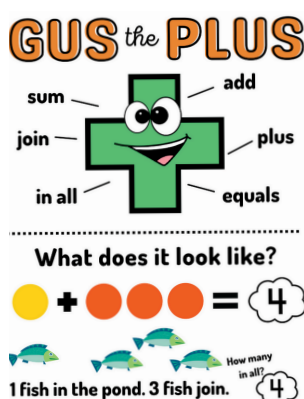
Students need to be able to....

- Solve addition and subtraction equations using a variety of strategies.

  Example: objects, fingers, drawings, counting on/counting back using a number line

- Understand that one problem can be represented in multiple ways and understand how they relate to each other.

  Example: The equation 3+7=? is the same as ?=3+7, 10–3=?is the same as ?=10–3

- Determine and explain if equations involving addition or subtraction are true or false.

Vocabulary to review

Equation: a math statement where two expressions or values are separated by an equal sign (ex: 2 + 3 = 5 or 6 = 3 + 3)

Equal sign: a symbol that means the same value as

Sum: the result of adding two or more numbers

Difference: the result of subtracting one number from another number

Addition and Subtraction Activities

- **Addition Sticks** – Write an addition equation on a notecard. Using one popsicle stick, place an addition sign in the middle. Have your child use clothes pins to build the equation and solve it.

- **Playdough Smash Subtraction** – Give your child a number between 0–10. Have your child roll that many playdough balls and place in a straight line. Give your child a second number that is smaller than the first. Have your child smash that many playdough balls. Discuss how many are left. Practice writing a subtraction equation to match.

Measurement

Measure, compare, and categorize objects according to their common attributes including two and three dimensional shapes

Sample Responses:

The scissors are 4 inches long.

The pencil is 6 inches long.

The pencil is longer than the scissors.

Students need to be able to....

- Compare two objects based on a single attribute such as length, volume, and weight.
- Express the length of an object using non-standard objects end to end.
- Compare and sort two-dimensional shapes (circle, square, rectangle, triangle) or three-dimensional shapes (cone, cube, cylinder, spheres) based on similarities, differences, and position.
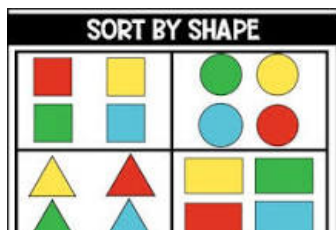
Vocabulary to review

Length: the distance from one end of an object to the other

Volume: the amount of space in a 3D object

Weight: the measurement of how heavy an object is

2D Shapes: a flat object that has length and width

3D Shapes: a solid figure that has three dimensions; length, width and height

Measurement Activities

- **Family Shoe Sizes** – Using one shoe from each family member, line them up in front of your child. Ask your child the following questions: Whose shoe is the longest, whose shoe is the shortest? Then use toy cars or blocks and have your child practice measuring the length of each shoe.

- **Weigh Station** – Using a hanger, string, and two cups, create a balance scale. Collect a variety of items or toys from around the house. Have your child choose two objects. Ask your child the following questions:
  1. Which item is heavier?
  2. Which item is lighter?
  3. Which item weighs less? More?

- **Shape Hunt** – Take your child on a shape hunt around your home. Look for objects that are the same shape as the 2D and 3D shapes below:
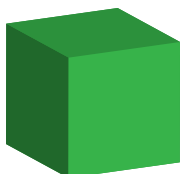
  2D Shapes: circle, triangle, square, rectangle
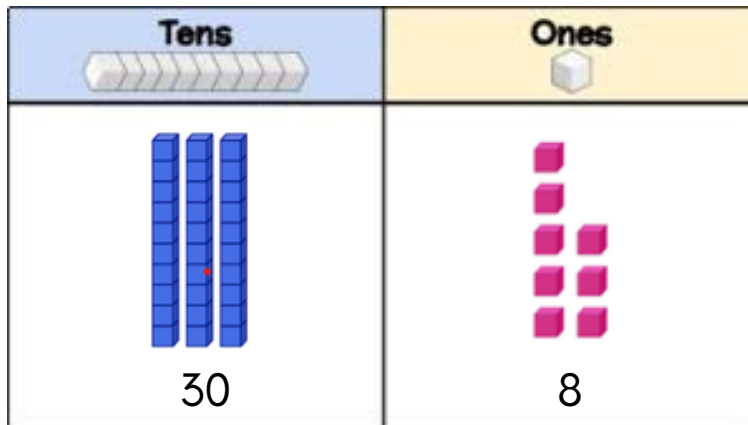
  3D Shapes:
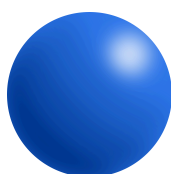
SPHERE	CUBE	CYLINDER	CONE

Place Value

Understanding the place value of tens and ones within two-digit whole numbers

Tens	Ones
30	8

Students need to be able to....

- Practice using objects, drawings, and equations.
- Plot, order, and compare whole numbers up to 100.
- Read and write numbers from 0 to 100 written in standard form, expanded form and word form.

Vocabulary to review

Place value: the value of *where* each digit is in a number

Ones: the rightmost digit of a number (includes numbers 0-9)

Tens: a unit of ten ones

Standard form: a way of writing a number in its most accepted form (ex: 38)

Expanded form: a way of writing a number as a value of each digit (ex: 30 + 8)

Find printable base ten blocks here.

The following "at-home" items can be used as an alternative:
- Legos (stack 10 together for a stick of ten and single Legos as ones)
- Pretzel sticks as tens and mini marshmallows as ones
- Playdough (roll out "worms" as tens and single balls as ones)

Place Value Activities

- **Number building** – Call out a two-digit number and ask your child to build it using tens and ones. Next, ask your child to write the number in expanded form.

Tens	Ones

Tip: Draw a tens & ones chart before building numbers!

- **Card games** – Together, write out numbers on index cards from 0-99.

- **Draw three numbers** and ask your child to lay out the cards in order from least to greatest.

- **Draw a number off the top** of the deck and ask your child to count forward by ones (ex: 56, 57, 58...) or backwards by ones (ex: 29, 28, 27...)

- **Mix the cards and split the deck in half**. Each of you pull a card. The person with the greater number keeps both cards. Repeat until all cards have been played. The person who collects all the cards is the winner!

Tip: ask your child to explain if it was the number in the tens or ones place that made the number greater.
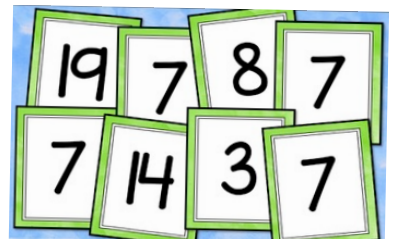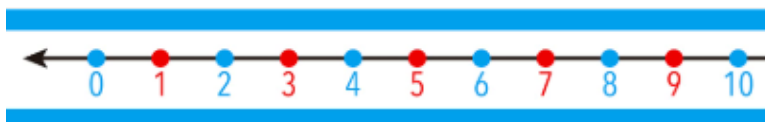
Addition & Subtraction Relationships

Extending an understanding of addition and subtraction and the relationship between them
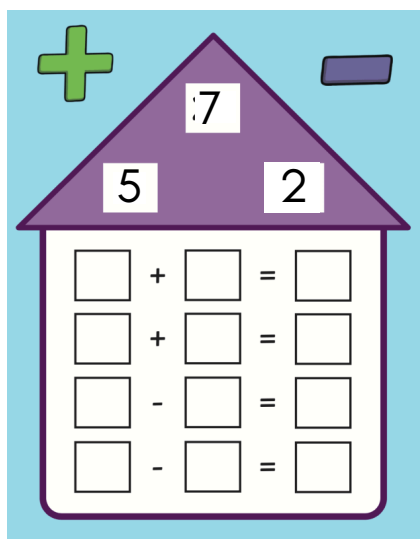
Related facts show a relationship between a set of numbers. We often refer to these numbers as a "Fact Family". Example:

5 + 2 = 7	7 – 5 = 2
2 + 5 = 7	7 – 2 = 5

Students need to be able to....

- Restate a subtraction problem as a missing addend problem
  Example: The equation 12 – 7 =? can be restated as 7+? = 12 to determine the difference is 5.
- Determine and explain if equations involving addition or subtraction are true or false.

Vocabulary to review

Equation: a math statement where two expressions or values are separated by an equal sign (ex: 2 + 3 + 4 = 9 or 6 = 3 + 3)

**Equal sign:** a symbol that means the same value as

Addend: any number that is being added to another number

Sum: the result of adding two or more numbers

Difference: the result of subtracting one number from another number

Addition & Subtraction Activities

- **Have three family members hold a number card** from 1-20 that is part of a Fact Family. Create number cards with a plus sign, minus sign, and equal sign. Let your child arrange each family member to make a true addition or subtraction equation. Record the equations on paper.
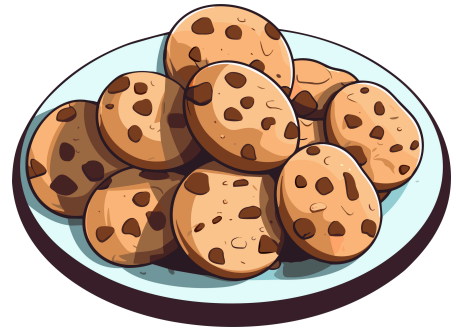
- **Use meal time to add and subtract.** For example, "there are 5 cookies on the plate. How many will be left if 3 of us eat one?" Let your child demonstrate by manipulating the cookies. Ask your child to give a related fact as well.

- **Let your child be the teacher!** Write addition and subtraction equations on a paper, solving some correctly and some incorrectly. Let your child check your work. If the equation is wrong, tell your child to draw a picture (ex: circles) to explain why it is wrong.

Measurement

Developing an understanding of measurement of physical objects, money, and time

The scissors are 4 inches long.

The pencil is 6 inches long.

The pencil is longer than the scissors.

Students need to be able to....

- Compare and measure the length of objects.
- Tell time to the hour and half hour.
- Identify the value of coins.
- Identify combinations of coins and dollar bills.

| Name	Heads	Tails
penny		
nickel		
dime		
quarter		

Vocabulary to review

Analog time: time represented by an hour and minute hand

Digital time: time represented by numerical digits

Estimate: to find the value that is close to the correct answer using a broad calculation
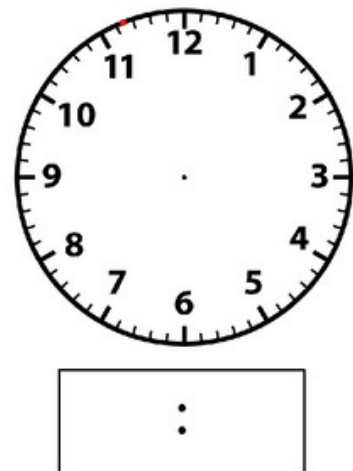
Measurement Activities

- **Measurement Hunt –** Select several objects around the house that can be measured with a ruler. Have your child estimate how many inches or centimeters each object will measure. Then, use a ruler to measure each object to see how close your child's estimate was to the actual measurement.
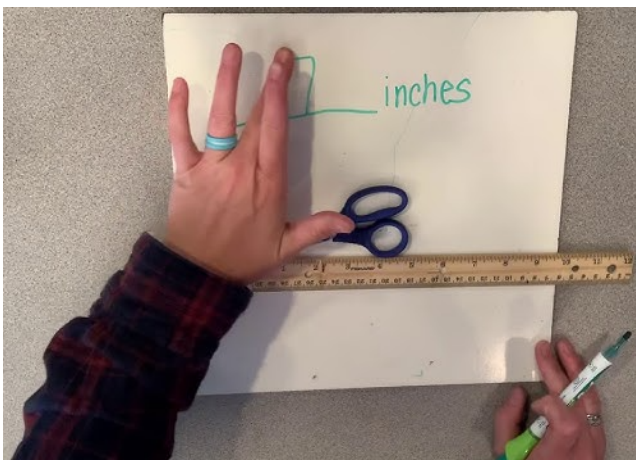
Find a printable ruler <u>here.</u>

What Time Is It?

- **What time is it?** Look at the time on your phone or microwave when it is to the hour or half hour (:00 or :30). Using a clock template, have your child draw the hour and minute hands on an analog clock and write the hour and minutes on the digital clock.

- **Show me the money!** Collect coins and have your child sort them by pennies, nickels, dimes, and quarters. Next, ask your child to make one dollar using one type of coin at a time. Tip: Remind your child that one dollar is equal to 100 cents!

Geometric Figures

Categorizing, composing, and decomposing geometric figures
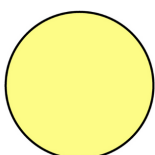
First Grade

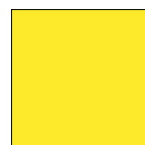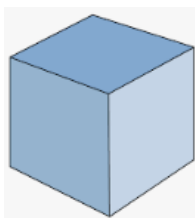Two-dimensional figures:
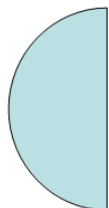
semi-circle   triangle   circle   hexagon   rectangle   square   trapezoid
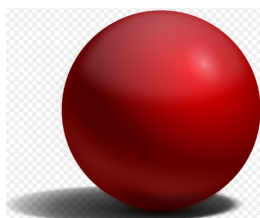
Three-dimensional figures:
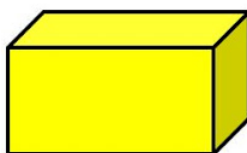
cube   sphere   rectangular prism   cone   cylinder
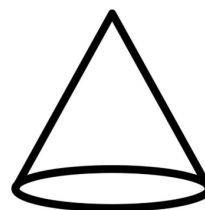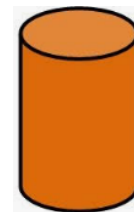
Students need to be able to....

- Identify, compare, and sort two- and three-dimensional figures based on their defining attributes.
- Sketch two-dimensional figures.
- Compose and decompose two- and three-dimensional figures.

Vocabulary to review

Edge: a line that connects one corner or point to another

Vertex: a point where two or more line segments meet (also known as a corner)

Geometric Figures Activities

- **Shape Sort** - Use playdough to build three-dimensional shapes and sort them into different groups based on how many flat surfaces the shape has.
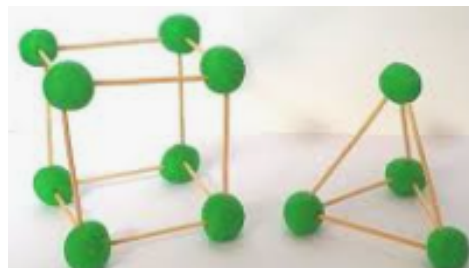
- **Shape Stack** - Use playdough or find objects to build three-dimensional shapes and stack the shapes together to make new shapes. For example, a cone can be placed on a cube to look like a house. Use multiple new shapes to build a neighborhood. Tip: Use toothpicks to build!

- **Shape Hunt** - Take your child on a shape hunt around your home. Look for objects that are the same shape as a:
  - semi-circle
  - triangle
  - rectangle
  - square
  - hexagon
  - sphere
  - cube
  - rectangular prism
  - cone
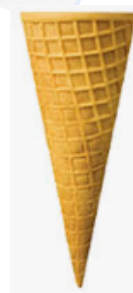
Place Value

Extending understanding of place value in three-digit numbers

Students need to be able to....

- Read and write numbers from 0 to 1,000 using standard form, expanded form, and word form.
- Compose and decompose three – digit numbers in multiple ways using hundreds, tens, and ones.
- Plot, order, and compare numbers up to 1,000.

Vocabulary to review

Place value: the value of *where* each digit is in a number

Standard form: a way of writing a number in its most accepted form (ex: 38)

Expanded form: a way of writing a number as a value of each digit (ex: 30 + 8)

Less Than: term used when comparing two values where one is smaller than the other

Greater Than: term used when comparing two values where one is larger than the other

Equal to: a term used to show that two numbers have the same value

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compare
identifying when a number is greater than, less than, or equal to another number

40 < 50
85 > 72   99 = 99

order
to arrange a group of numbers based on their value

750   755   760   770
greatest   least

compose
to combine parts to form a number

700 + 20
720

decompose
to break a number into smaller parts

500 30 2

Place Value Activities

Place Value Cups: Practice Expanded Form

1. Twist the cups to create a number.
2. Write the number created in expanded form.
3. Carefully pull the cups apart to reveal and check the answer.

Roll it! Make it! Expand it!

1. Roll the dice.
2. Write down each number.
3. Draw the hundreds, tens, and ones.
4. Write the expanded form.

Roll It			Make It	Expand It
H	T	O		
2	3	6	▢▢ ▐▐▐ ▪▪▪	200 + 30 + 6 = 236

Comparison with Cards

1. Use a deck of playing cards, focusing only on the number value.
2. Flip two cards and have your child identify which number is greater than, less than, or equal to.
3. You can also ask them to arrange a set of cards in order from least to greatest.
4. Challenge your child to create 2-digit and 3-digit numbers with the cards.
5. Compare numbers using symbols.
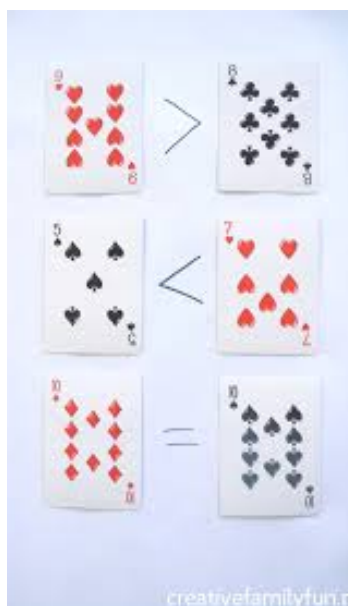
Addition and Subtraction

Building fluency and algebraic reasoning with addition and subtraction

Students need to be able to....

- Solve one-and two-step addition and subtraction.
- Determine the unknown whole number.
- Determine even and odd number of groups.
- Use repeated addition to find the total in equal groups.

Solve One- & Two-Step Addition and Subtraction	Determine Unknown Whole Number	Even and Odd Number of Groups	Repeated Addition to Find the Total in Equal Groups
Marta picked 22 apples. Leon picked 5 fewer apples. How many apples did Marta and Leon pick? $22 - 5 = 17$ apples Leon picked. $22 + 17 = 39$ apples in all.	$14 + 8 = ? - 6$ Find the value of the side with no missing number. $14 + 8 = 22$ What number can you subtract 6 from to get 22? $14 + 8 = 28 - 6$	Even Number: $16 = 8 + 8$ Odd Number: $13 = 6 + 6 + 1$	An array has equal rows & equal columns. $4 + 4 + 4 = 12$ $3 + 3 + 3 + 3 = 12$
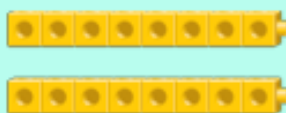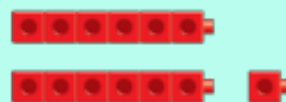
Vocabulary to review

Sum: the result of adding two or more numbers
Difference: the result of subtracting one number from another number
Repeated addition: an addition sentence with the same addend repeated
Array: a group of objects set in equal rows and columns
Addend: any number that is being added to another number

Addition and Subtraction Activities

Math Shopping

- Create a store using items around your house. (ex: toy store, clothing store, grocery store)
- Create price tags using numbers up to 100.
- Pick out items from the store, then find the sum by adding the numbers.
- Give your child a total amount to spend at the store. While shopping, subtract the item amount from the total.
- Is the total even or odd?

Arrays & Repeated Addition with Playdough

- Create word problems that include the amount of rows and the amount of objects in each row.
- Ask your child to use playdough to make an array for the problem.
- Solve using repeated addition.
  (4 + 4 + 4 = 12)
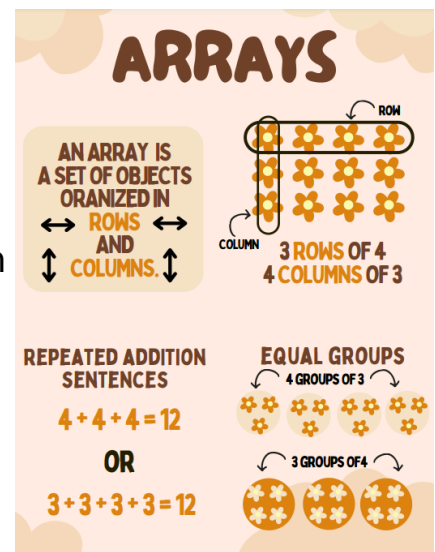
Dad planted 3 rows of 4 tomato plants each. How many tomato plants did he plant in all?

_____ tomato plants

write the repeated addition number sentence:

ARRAYS

AN ARRAY IS A SET OF OBJECTS ORANIZED IN ↔ ROWS ↔ AND ↕ COLUMNS. ↕

ROW
COLUMN
3 ROWS OF 4
4 COLUMNS OF 3

REPEATED ADDITION SENTENCES

4 + 4 + 4 = 12

OR

3 + 3 + 3 + 3 = 12

EQUAL GROUPS
4 GROUPS OF 3
3 GROUPS OF 4

Measurement

Extending the understanding of measurement of objects, time, and perimeter of geometric figures

Students need to be able to....

- Estimate and measure the length of an object to the nearest inch, foot, yard, centimeter or meter by selecting and using an appropriate tool.

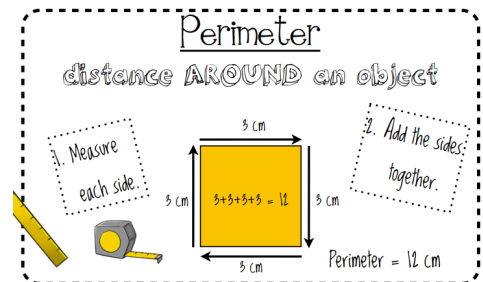- Use analog and digital clocks to tell and write time to the nearest five minutes using a.m. and p.m. appropriately.

- Express time using terms o'clock, half an hour, half past, quarter of an hour, quarter after and quarter til.

- Find the perimeter of a polygon with whole-number side lengths. Polygons are limited to triangles, rectangles, squares, and pentagons.

Inches, feet & yard
12 inches = 1 foot
3 feet = 1 yard

half past
30 minutes past any hour.
1:30

quarter after
15 minutes past any hour.
1:15

quarter till
15 minutes until the next hour.
1:45

Perimeter
distance AROUND an object
1. Measure each side.
2. Add the sides together.
3 cm
3 cm
3+3+3+3 = 12
3 cm
3 cm
Perimeter = 12 cm
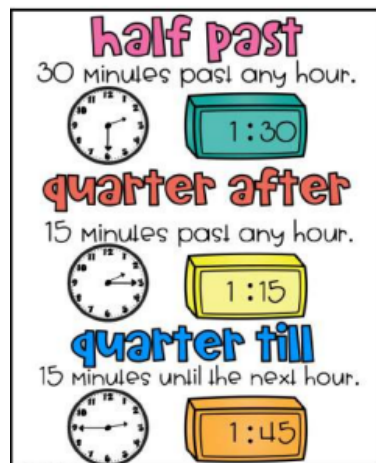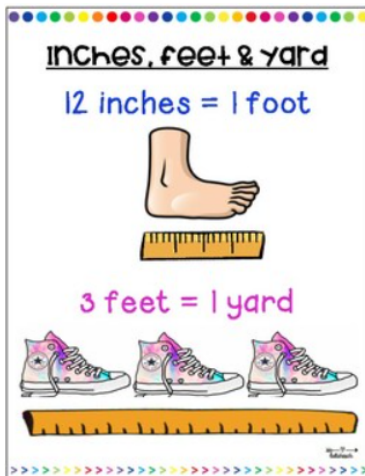
Vocabulary to review

A.M: the period from midnight until noon and tells before midday

P.M: the period from noon until midnight and tells after noon

Perimeter: the sum of the side lengths of a polygon

Measurement Activities

Measurement Hunt

- Pick out objects around your house for your child to measure using a ruler, yard stick, and/ or tape measure [ex: tv, pencil, couch, chair, mirror, countertop].
- Have your child record their measurements on a sheet of paper.
- Talk with your child about the size and perimeter of the objects and their measurements in terms of inch, foot, yard, centimeter, and meter.

Daily Schedule

- Create a daily schedule with pictures representing the daily activity and the time.
- Have your child tell you the time of the activity using a.m. and p.m.
- Talk with your child about what the time will be when the activity is over [ex: you start brushing your teeth at 7:30am. It takes 5 minutes to brush your teeth. It will be 7:35am when you are finished brushing your teeth].

Find the Perimeter

- Have your child measure and calculate the perimeter of different objects in your house, such as a placemat, rug, or picture frame.
- Next, choose a room in your home and find its perimeter.
- Compare different areas—which room in your house has the greatest perimeter?

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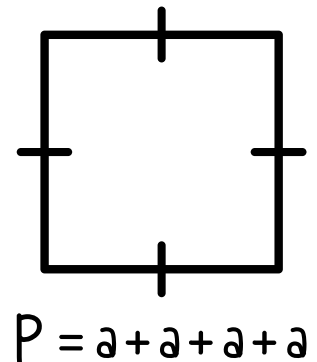
Geometric Reasoning

Developing spatial reasoning with number representations and two-dimensional figures

Students need to be able to....

- Identify and draw two-dimensional figures based on their defining attributes. Figures are limited to triangles, rectangles, squares, pentagons, hexagons, and octagons.
- Categorize two-dimensional figures based on the number and length of sides, number of vertices, whether they are closed or not, and whether the edges are curved or straight.
- Identify line[s] of symmetry for a two-dimensional figure.

Shape	Name	Sides	Vertices
▲	Triangle	3	3
■	Square	4	4
⬠	Pentagon	5	5
⬡	Hexagon	6	6
⬢	Heptagon	7	7
⯃	Octagon	8	8

Vocabulary to review

Line of Symmetry: a line that divides a figure into two parts with the same shape and size. When the figure is folded along the line of symmetry, the two parts match

Vertex: the point at which the rays or sides of an angle, the sides of a two-dimensional figure, or the edges of a three-dimensional figure meet (also known as a corner)

Polygon: a closed, two-dimensional figure composed of at least three straight sides and three vertices

Pentagon: a polygon containing exactly five sides and five vertices

Hexagon: a polygon containing exactly six sides and six vertices

Octagon: a polygon containing exactly eight sides and eight vertices

Closed Shape: a shape that has no open ends and starts and ends at the same point

Second Grade

Geometric Reasoning Activities

Make Polygons

- Have your child create polygons at home!
- Give your child opportunities to create polygons tangibly. They can bend pipe cleaners, use toothpicks as polygon sides, or make polygons using rubber bands and Geoboards. Geoboards are great because your student can easily adapt their design and make multiple shapes quickly.

Find Polygons

- Have your child identify polygons around your house or outside!
- Have your child tell the polygon shape name, number of sides, and number of vertices.
- Your child can find polygons everywhere – on the truss of a bridge and the walls of a building. A polygon is the rectangular portion of a chair that you sit on and the rectangular-shaped screen on your laptop, television, or mobile phone.

Shapes we see in everyday life

PENTAGON

| The Pentagon Building in the US | Soccer balls | Streets signs | Symbol for house or dwelling |

HEXAGONS

| Bolts | Floor tiles | The white part of soccer balls | Sections of a beehive | The shapes formed by fence wire |

OCTAGONS

| Stop signs | Open umbrellas | Windows | Tiles | Candles |

Addition & Subtraction

Adding and subtracting multi-digit whole numbers, including using a standard algorithm

345

+412

This is a standard algorithm

Example

Step 1
Add the numbers in the ones place
345
+ 412
7

Step 2
Add the numbers in the tens place
345
+ 412
57

Step 3
Add the numbers in the hundreds place
345
+ 412
757

Students need to be able to....

- Add and subtract multi-digit whole numbers within 1,000 using a standard algorithm.

Vocabulary to review

Addition: to combine or put together two or more amounts

Subtraction: taking one number away from another

Standard Algorithm: the most common procedure or step-by-step directions for solving a problem

Multi-digit: having more than one digit

Addition & Subtraction Activities

Addition with regrouping
Remember: Top to Bottom, Right to Left!

STEP 1 : Add the ones

6 + 4 = 10, so I can regroup (1 ten, 0 ones)

```
  1 ↓
3 4 6
+2 5 4
      0
```

STEP 2 : Add the tens

10 + 40 + 50 = 100, so I can regroup (1 hundred, 0 ones)

```
  1
3 4 6
+2 5 4
    0 0
```

STEP 3 : Add the hundreds

100 + 300 + 200 = 600

```
    1
→ 3 4 6
  +2 5 4
  6 0 0
```

Three - Digit Subtraction with Regrouping
(Borrow a Ten and a Hundred)

Hundreds	Tens	Ones
2 3	13 4	12 2
- 1	6	3
1	7	9

1. Always start with the ones.

2. If you can't subtract the ones, take a ten and move it to the ones column.
   1 ten = 10 ones

3. If you can't subtract the tens, take a hundred and move it to the tens column.
   1 hundred = 10 tens

4. Subtract the ones.

5. Subtract the tens.

6. Subtract the hundreds.

- **Use number cards or playing cards** to make addition or subtraction equations. For example, let your child draw four cards and build the biggest/smallest number they can make. Then, you draw three numbers and have your child do the same with your cards. Next, have your child write these numbers in an addition or subtraction equation and solve.
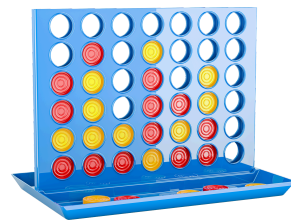
- **Use a gameboard of choice and dice** to create an addition/subtraction equation. For example, choose any game of your liking. Then, have your child roll dice to create two four-digit numbers. Next, have your child add/subtract these numbers. If correct, the child gets a move on the board game.

Multiplication and Division

Building an understanding of multiplication and division, the relationship between them, and the connection to area of rectangles

G.E.T
groups x each = total

$3 \times 2 = 6$
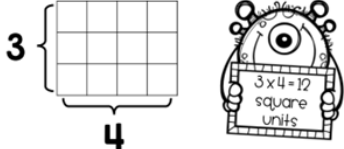
1. Draw circles for your groups.
2. Draw shapes (Dots, X's, triangles) for each group.
3. Count to solve for your total.

Area Model

A way to calculate a shape's area by multiplying the length and width of the object.

There are 3 rows with 4 squares in each row.

3 × 4 = 12 square units

Multiplication and Division Related Facts

3x4= 12
4x3=12
12 divided by 4 =3
12 divided by 3= 4

Students need to be able to....

- Multiply one-digit whole numbers by multiples of 10.
- Multiply and divide numbers with factors up to and including 12.
- Determine the unknown whole number in a multiplication or division equation when the unknown number is the multiplier or divisor.
- Find the area of a rectangle labeled with whole-number side lengths by multiplying.

Vocabulary to review

Product: the result (answer) of multiplying numbers together

Quotient: the answer to a division problem

Factors: whole numbers into which a positive whole number can be evenly divided

Array: an arrangement of objects, pictures, or numbers in rows and columns

Equal Groups: when two groups have the same amount of objects

Multiply: the process of adding the same number together multiple times

Divide: to split things into equal parts or to share equally

Dividend: the number being divided

Divisor: the number that divides another number

Vocabulary Tip

Use vocabulary words in everyday language when possible.

Third Grade

Multiplication and Division Activities
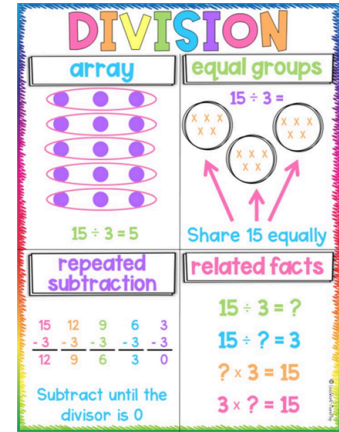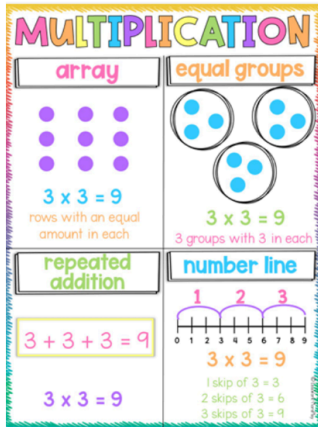
- **Use number cards or Uno Cards** to practice math facts. Students flip over two cards or pick two numbers to be their factors.

- **Use materials in the house** (goldfish, cereal, buttons, beads, etc.) to have students build equal groups or arrays.

- **Use Cheez-Its to create rectangles.** Then, have your child determine the area by counting the squares. Click for a free resource: CLICK HERE

- **Use Legos to find the area of rectangles**. Have students count the squares to determine the area of the rectangle.
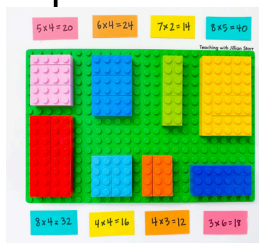
Fractions

Developing an understanding of fractions
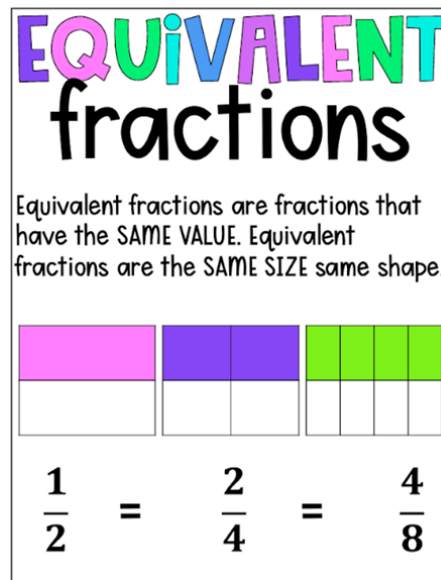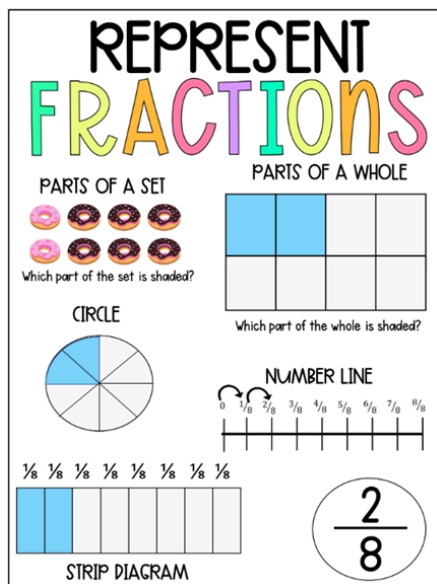
Students need to be able to....

- Read and write fractions up to one (with denominators of 2-6, 8, 10, and 12) using standard form, numeral-word form, and word form.
- Represent unit fractions with denominators 2-6, 8, 10, and 12 using models.
- Represent and add the sum of unit fractions including fractions greater than one whole.
- Compare fractional numbers with the same numerator or the same denominator.

Vocabulary to review

Fraction: a number that names part of a whole or part of a group

Numerator: the number above the bar in a fraction that tells how many parts of a group

Denominator: the number below the bar in a fraction that tells the number of equal parts

Unit Fraction: a fraction with the numerator 1

Equivalent Fractions: two or more fractions that name the same amount

Third Grade

Fractions Activities

- **Finding fractions in real life** – Help students recognize fractions in everyday situations such as half a cookie, fourths of a cake, etc.

- **Use pizza slices to explain fractions** by having the conversation, "If I have 1 whole pizza, cut into 8 pieces, my fraction is 8/8ths of pizza. If I eat 2 slices of pizza, I have 6/8ths left."

- **Bake a dessert from scratch.** Use measuring cups to show fractions in real life (1/8, 1/4, 1/2).

Geometry
Extending geometric reasoning to lines and attributes of quadrilaterals

Quadrilaterals

Trapezoid
set of parallel lines

Parallelogram
2 set of parallel lines

Rectangle
4 right angles &
2 set of parallel lines

Rhombus
Congruent sides
2 set of parallel lines

Square
Congruent sides, 4
right angles and
2 set of parallel lines
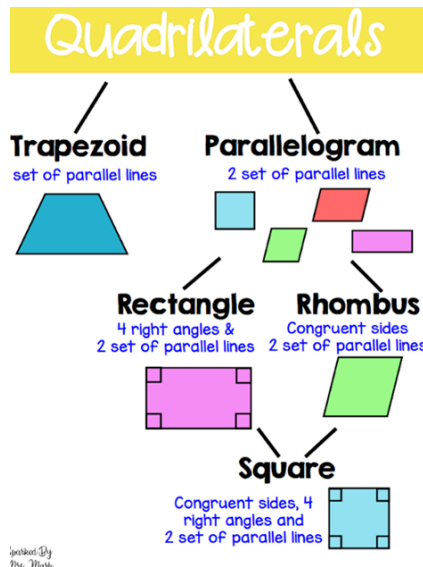
ALL ABOUT LINES!

Term	Definition	Drawing
Point	A dot, an exact location	• A
Line	A straight path that goes on forever in both directions	
Ray	A line with one endpoint	
Line Segment	Part of a line that has 2 endpoints	
Parallell Lines	Lines that are the same distance apart but will never meet or intersect	
Perpendicular Lines	Lines that intersect, or cross, to form 4 right angles	
Intersecting Lines	Lines that cross at one point and form angles that are not right angles.	

Students need to be able to....

- Draw points, lines, line segments, rays, intersecting lines, and perpendicular and parallel lines.
- Identify points, lines, line segments, rays, intersecting lines, and perpendicular and parallel lines in two-dimensional figures.
- Identify and draw parallelograms, rhombi, rectangles, squares, and trapezoids as examples of quadrilaterals.

Vocabulary to review

Point: a tiny dot that marks an exact location

Intersecting Lines: lines that cross at one point and form angles that are not 90 degrees

Line: a straight path that goes on forever in both directions

Line Segment: part of a line that has two end points

Ray: a line with one endpoint

Perpendicular Lines: lines that intersect at a perfect, 90 degree, corner

Parallel Lines: lines that are the same distance apart and will never meet or intersect

Quadrilateral: a four-sided 2D figure

Parallelogram: a quadrilateral containing two pairs of parallel sides

Rhombus: a parallelogram with four equal sides; no right angles

Trapezoid: a quadrilateral with exactly one pair of parallel sides

Vocabulary Tip

Use physical movements and/or hand motions to represent the word.

Geometry Activities

- **Build shapes with toothpicks or Legos.** Help students build and name shapes made out of toothpicks or describe a shape for them to build and then tell you what shape it is. For example, "Put four toothpicks on the top and bottom. Put two toothpicks on the left and right sides. What did you make?"

Quadrilateral Helpful Hints
A quadrilateral is a four-sided shape.

square
- 4 <u>equal</u> sides
- opposite sides parallel
- four 90° angles
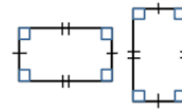
rectangle
- 2 equal parallel <u>long</u> sides
- 2 equal parallel <u>short</u> sides
- four 90° angles

trapezoid
- 1 pair of parallel sides

parallelogram
- 2 pairs of parallel sides
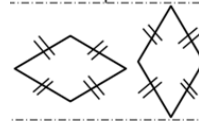
rhombus
- parallelogram with 4 equal sides
- has <u>no</u> 90° angles

kite
- 2 pairs of equal sides
- has no parallel sides

- **Have a geometry scavenger hunt.** For example, find things shaped as a rhombus or bring the most rectangles back in two minutes.

- **Name Game** - Write your name in all caps and determine what each line segment is. Go deeper by determining the type of angle (90 degree, right angle; acute (less than 90 degrees) angle; obtuse (more than 90 degrees) angle). Move on to other names.

- **Make lines with candy.** Using any long thin candy, build lines and line segments.

Multiplication and Division

Extending understanding of multi-digit multiplication and division
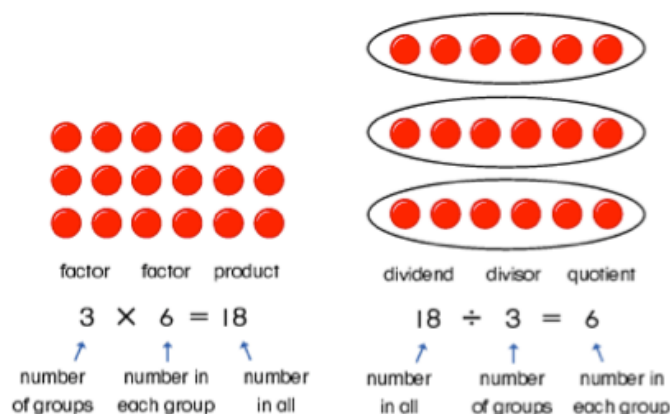
Multiplication combines equal groups to find a total, where as division splits a number into equal groups.

factor   factor   product

3 × 6 = 18

number of groups   number in each group   number in all

dividend   divisor   quotient

18 ÷ 3 = 6

number in all   number of groups   number in each group

Students need to be able to....

- Recall multiplication facts with factors up to 12 and related division facts with automaticity.
- Multiply two whole numbers, up to three digits by up to two digits.
- Divide a whole number up to four digits by a one-digit whole number and represent remainders as fractional parts of the divisor.
- Explore the multiplication and division of multi-digit whole numbers using estimation, rounding and place value.

Vocabulary to Review

Factors: whole numbers into which a positive whole number can be evenly divided

Product: the answer in a multiplication problem

Divisor: the number of groups to split a number into

Dividend: the total amount to be divided

Quotient: the answer in a division problem

Remainder: the amount leftover when a number cannot be evenly divided

Vocabulary Tip
Use examples and non-examples.

Multiplication and Division Activities

Multiplication of multi-digit numbers can be done using the standard algorithm or the box/window method.

> **HINT:** Use graph paper or turn lined paper sideways to ensure numbers stay in the correct columns!

MULTI-DIGIT MULTIPLICATION
STANDARD ALGORITHM

1. multiply the number in the ones place value by all numbers in the top factor

   ⁺¹ ⁺¹
   $$532$$
   $$\times 4\,\textcircled{6}$$
   $$\overline{3192}$$
   PARTIAL PRODUCT

2. regroup all double digit products

3. add a place holder zero (one for each place value you completed.)

   ⁺¹
   $$532$$
   $$\times \textcircled{4}6$$
   $$3192$$
   $$+\ 2128\,☺$$
   $$\overline{24,372}$$
   PARTIAL PRODUCTS

   PLACE HOLDER ZERO

4. repeat steps

5. add partial products

Multiplication Strategy: Box / Window Method

A multiplication strategy that uses boxes or windows to represent the parts of the factors in an equation.

$$\boxed{36 \times 23}$$

STEP 1 — Break apart the numbers or factors in the equation. Label the numbers outside the box/window.

	30	+	6
20 +			
3			

STEP 2 — Multiply the numbers outside each box. Put the totals in the corresponding box.

	30	+	6
20 +	600		120
3	90		18

EX: 20 X 30   3 X 30
20 X 6   3 X 6

STEP 3 — Add up all the boxes/windows for the total, or the product of 36 X 23

600 + 120 + 90 + 18 = 828

$$\boxed{36 \times 23 = 828}$$

The box/window method breaks a number apart using place value allowing for multiplication of simple factors.

> **HINT:** Use a different color for each box to help identify the partial products.

Multiplication and Division Activities

Fact Fluency Activities:

Multiplying Card Game

- Using index cards, have your child create a set of digit cards from 0 to 10 with five copies of each digit card in the deck. Then partner up with your child and put one deck in the middle. The lead player shuffles the deck and then deals two cards to each player. After that, players multiply their two cards and announce their individual products. Whoever has the highest product wins all four cards. The player with the most cards at the finish of the deck wins.

Multiplying Dominoes

- Using dominoes, start with all the dominoes upside down. Each player will flip over two dominoes and multiply the numbers represented on each domino. The player with the highest (or lowest) product wins.
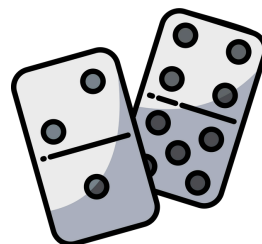
Multiplication Shake

- Using an empty egg carton, write a number from 0 to 11 with a permanent marker. Give each player two beans or beads. Players put the beads in their boxes and close them tight. When you say go, they shake the box. When you say stop, they open the box and multiply the two numbers where the beads landed. Each player raises their hand and shares the fact they came up with along with the product. You can ask things like, "Who has the highest product?" "Who has the lowest product?" "Who has an odd or even product?" and then try it again.

Take it Outside

- Call out multiplication facts to your child as you toss a ball back and forth to each other. The goal is to say the product as you catch the ball. Stretch it further– state the related division fact as you toss the ball back to your partner.

Multiplication and Division Activities

Division can be done using the standard algorithm (long division) or the box method.

HINT: Use graph paper or turn lined paper sideways to ensure numbers stay in the correct columns!

Division

Long Division

$2680 \div 8 = ?$

0	3	3	5

8) 2 6 8 0

0

2 6

2 4

2 8

2 4

4 0

4 0

0

335

Divide ÷
Multiply ×
Subtract −
CHECK ✔
Bring Down
Repeat ☺

Box Method

$278 \div 3 = ?$

Dividend

	0	9	2 r2
×			
3	2	27	8
	−0	−27	−6
	2	0	2

Divisor 3

Remainder

$92 \frac{2}{3}$

INTERPRETING REMAINDERS

Drop it!
Ignore the remainder and use the quotient as your answer
* Use when question asks for FULL or WHOLE items

Add it!
Add one more to the quotient.
* Use when you cannot leave anything or anyone out.

Share it!
Share the remainder as a fraction or a decimal.
* Use with food, money or items easily split in real life

Use it!
Use the remainder as your answer
* Use when the question asks how many are left over or left out

When dividing, help your child know how to use the remainder based on the situation presented in the problem.

Fractions and Decimals

Developing the relationship between fractions and decimals and beginning operations with both

Fractions and decimals represent part of the whole.

0.25
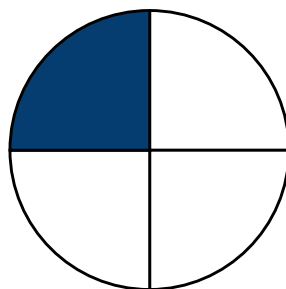
$\dfrac{1}{4}$

Students need to be able to....

- Identify the number that is one-tenth more, one-tenth less, one-hundredth more and one-hundredth less than a given number.
- Explore the addition and subtraction of multi-digit numbers with decimals to the hundredths.
- Develop an understanding of the relationship between different fractions and the relationship between fractions and decimals.
- Model and express a fraction, including mixed numbers and fractions greater than one, with the denominator 10 as an equivalent fraction with the denominator 100.
- Use decimal notation to represent fractions with denominators of 10 or 100, including mixed numbers and fractions greater than 1, and use fractional notation with denominators of 10 or 100 to represent decimals.
- Identify and generate equivalent fractions, including fractions greater than one. Describe how the numerator and denominator are affected when the equivalent fraction is created.
- Plot, order and compare fractions, including mixed numbers and fractions greater than one, with different numerators and different denominators.
- Build a foundation of addition, subtraction and multiplication operations with fractions.
- Decompose a fraction, including mixed numbers and fractions greater than one, into a sum of fractions with the same denominator in multiple ways. Demonstrate each decomposition with objects, drawings and equations.
- Add and subtract fractions with like denominators, including mixed numbers and fractions greater than one.
- Explore the addition of a fraction with denominator of 10 to a fraction with denominator of 100 using equivalent fractions.
- Extend previous understanding of multiplication to explore the multiplication of a fraction by a whole number or a whole number by a fraction.

Fourth Grade

Fractions Activities
Vocabulary to review

Numerator: the number on the top in the fraction, represents the part of the whole

Denominator: the number on the bottom in the fraction, represents the whole

Mixed Number: a fraction that has a whole number and a fractional part

Fraction Greater than One (Improper Fraction): a fraction where the numerator is greater than the denominator

Factor: a number into which a positive whole number can be evenly divided

Common Factor: a number that divides evenly into the numerator and denominator

Simplified: a fraction where the numerator and denominator have no common factors other than one

Decimal: part of a whole written as tenths, hundredths, and thousandths

Fraction Fun with Food

- Cut a pizza into different sized slices and have your child place the slices in order from biggest to smallest. Talk about the fractional amount as you order the slices. "This slice is 1/2 of the pizza. 1/2 of the pizza is bigger than 1/4 of the pizza. This pizza is cut into eighths. 1/8 is smaller than 1/4 and 1/2." Then discuss how many 1/8 slices it takes to make 1/4 and 1/2 etc.
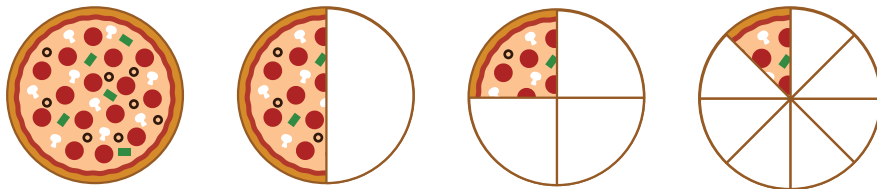
Lego Fractions

- Have your child use Lego pieces to order and compare fractions.
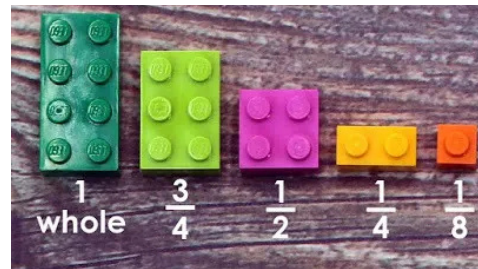
Fractions with Dominoes

- Play a game of war with dominoes by using the numbers on each side as fractions. The person who lays down the largest wins.

Decimal Activities

Decimal Place Value Notes

Thousand 1000 | Hundred 100 | Ten 10 | One 1 | Tenth 0.1 1/10 | Hundredth 0.01 1/100 | Thousandth 0.001 1/1000

×10 ÷10
×100 ÷100
×1000 ÷1000

The ones place and decimal point act as a mirror for our place value system.
As we move left by multiplying, the value increases.
As we move right by dividing, the value decreases.

3.78   Place: Hundredths

Value: 0.08   8/100

Ways to show numbers

standard	word
3.78	**Three and Seventy Eight Hundredths** ("and" is used to represent the decimal point)
Expanded (#1) (3 x 1) + (7 x 0.1) + (8 x 0.01)	**Expanded (#2)** (3 x 1) + (7 x 1/10) + (8 x 1/100)

Practice decimals using money

- Practice adding and subtracting with decimals using a restaurant menu. Have your child decide what they want to eat, write down the amount for each item, and add it up. Remind them to line up the decimal points!

Use coins to compare fractions and decimals

- Using coins, demonstrate how there are 10 pennies in a dime and that one penny is 1/10 or 0.1 of the dime. Continue by showing that there are 100 pennies in a dollar (whole), and that one penny would be 1/100 or 0.01
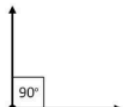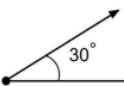
75%	$\frac{3}{4}$	$\frac{75}{100}$	0.75
50%	$\frac{1}{2}$	$\frac{50}{100}$	0.50
25%	$\frac{1}{4}$	$\frac{25}{100}$	0.25

Geometric Reasoning
Classifying and measuring angles

Students need to be able to....

- Explore angles as an attribute of a two-dimensional figure.
- Identify and classify angles as acute, right, obtuse, straight or reflex.
- Estimate angle measures.
- Using a protractor, measure angles in whole-number degrees.
- Draw angles of specified measure in whole-number degrees.
- Solve real-world and mathematical problems involving unknown whole-number angle measures.
- Write an equation to represent the unknown angle.

Angles

Right Angle	Exactly 90° - will have the "box" in the corner	90°
Acute Angle	Smaller than 90° - "Cute"	30°
Obtuse Angle	Larger than 90° Less than 180° - the "big Daddy"	112°
Straight Angle (Line)	Exactly 180° - makes a straight line	180°

Vocabulary to review

Acute Angle: an angle larger than 0 degrees and smaller than 90 degrees

Angle: angles are formed wherever two lines, segments, or rays intersect

Obtuse Angle: an angle larger than 90 degrees and smaller than 180 degrees

Reflex Angle: an angle larger than 180 degrees and smaller than 360 degrees

Right Angle: an angle measuring exactly 90 degrees

Straight Angle: an angle measuring exactly 180 degrees

Fourth Grade

Geometric Reasoning Activities

Printable Protractor

Find a printable protractor <u>HERE</u>.
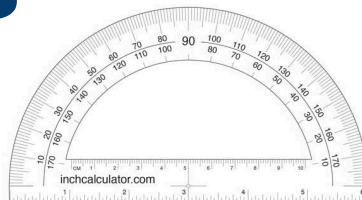
Measuring Angles

- Use colored washi tape, masking tape, painters tape, etc. to create intersecting lines on paper. Use a protractor to measure and label the angle measures in degrees.
- Classify the angles as acute, obtuse, right, straight, reflex.
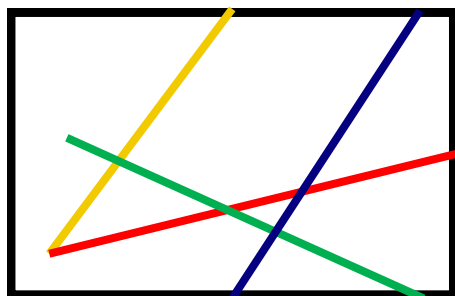
Angle Charades

- Pick one person to be "it".
- That person will make an angle with their arms.
- The family member to guess the type of angle (acute, right, obtuse, straight) first wins a point.
- The winner of the round then becomes "it".
- Play until someone reaches 10 points.

Real Life Angles

- Point out angles in everyday objects such as clocks, doors hinges, and table legs. This can help students see the relevance of angles in their daily lives and how they are used in the design and construction of everyday objects.
- Look for real-life examples of angles around your house or neighborhood. For example, a clock face has twelve 30-degree angles. A stop sign has eight 45-degree angles. Encourage students to identify angles in their surroundings and measure their degree using a protractor.

Data Analysis

Developing an understanding for interpreting data to include mode, median, and range

Students need to be able to....

- Collect and represent numerical data, including fractional values, using tables, stem-and-leaf plots or line plots.
- Determine the mode, median, or range to interpret numerical data.

STEM-&-LEAF PLOT

A graph that organizes data based on place value

STEM	LEAF
4	0 0 2 4 5 5
5	1 1 2 3 6 7 7 9

59

4|2 means 42

The key gives you place value information.

In this example, the stem is the tens place and each leaf is the ones place.

What Is a Line Plot?

A line plot is a quick simple way to organize information.

33cm 30cm 32cm 32cm EXAMPLE

30cm 30cm 35cm

30cm 29cm

```
        x
  x   x   x  x        x
29 30 31 32 33 34 35
```

Height of Toys

Line Plot

Each "X" represents one. They show how many of each.

```
              X
      X       X
      X       X
  X   X   X   X
 Red Blue Purple Green
```

All line plots have labels to tell you what data is being counted.
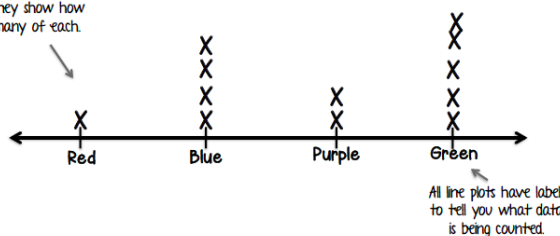
A **line plot** can also show data on a line with an "X" to show how many times an object, color, or thing has showed up.

Vocabulary to review

Mode: the number that appears MOST often in a data set

Median: the middle data point, when the data set is arranged in order

Range: the difference between the greatest and least numbers in a data set

Line Plot: a method of visually displaying a distribution of data values where each data value is shown as a dot or mark above a number line (also known as a dot plot)

Stem and Leaf Plot: a table that organizes data by place value to compare data frequencies

Data Analysis Activities

Line Plot Jump

- Using chalk or string, make a starting line
- Stand on 2 feet and jump as far as you can
- Have someone mark where you landed and measure the distance of your jump using a tape measure or yard stick
- Have everyone in your family jump twice
- Keep track of the measurements and add them to a line plot
- Determine the mode, median and range of your data
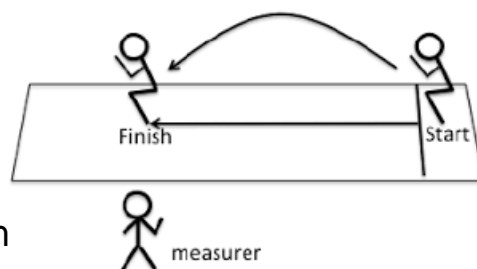
Stem	Leaf
6	8
7	5 7 9
8	0 2
9	2 6 6 7

Key 6|8= 68

Let's Check the Weather

- Over the course of one week, document the high temperature for each day
- At the end of the week, put the data into a stem and leaf plot
- Determine the mode, median, range of your data

Roll the Dice

- Gather a dice, paper, and pencil
- Draw a blank line plot with numbers 1-6
- Roll the dice
- Draw and X over the number you rolled
- Repeat until everyone has rolled 3 times
- Analyze the data.
- Find the median, mode and range
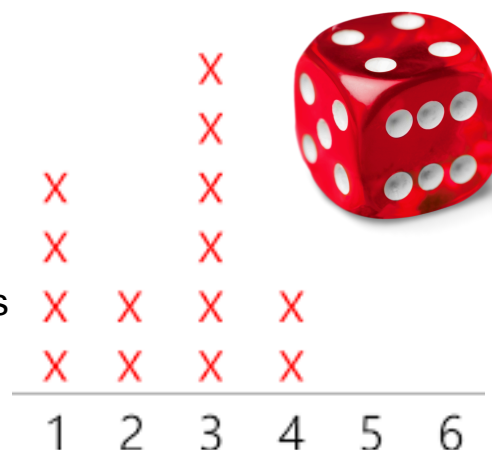
Help Your Child Succeed in School:
Build the Habit of Good Attendance Early
School success goes hand in hand with good attendance!

DID YOU KNOW?

- Starting in kindergarten, too many absences can cause children to fall behind in school.

- Missing 10 percent (or about 18 days) can make it harder to learn to read.

- Students can still fall behind if they miss just a day or two days every few weeks.

- Being late to school may lead to poor attendance.

- Absences can affect the whole classroom if the teacher has to slow down learning to help children catch up.

Attending school regularly helps children feel better about school—and themselves. Start building this habit in preschool so they learn right away that going to school on time, every day is important. Good attendance will help children do well in high school, college, and at work.

WHAT YOU CAN DO

- Set a regular bed time and morning routine.

- Lay out clothes and pack backpacks the night before.

- Find out what day school starts and make sure your child has the required shots.

- Introduce your child to her teachers and classmates before school starts to help her transition.

- Don't let your child stay home unless she is truly sick. Keep in mind complaints of a stomach ache or headache can be a sign of anxiety and not a reason to stay home.

- If your child seems anxious about going to school, talk to teachers, school counselors, or other parents for advice on how to make her feel comfortable and excited about learning.

- Develop back-up plans for getting to school if something comes up. Call on a family member, a neighbor, or another parent.

- Avoid medical appointments and extended trips when school is in session.

When Do Absences Become a Problem?

CHRONIC ABSENCE
18 or more days

WARNING SIGNS
10 to 17 days

SATISFACTORY
9 or fewer absences

Note: These numbers assume a 180-day school year.

For more on school readiness, visit attendanceworks.org and reachoutandread.org

Ayude a su hijo a tener éxito en la escuela:
Creando el hábito de buena asistencia a temprana edad
¡El éxito escolar va de mano a mano con una buena asistencia escolar!

¿SABÍA QUE...?

- Empezando en el kínder, muchas ausencias pueden causar que los niños se atrasen en la escuela.
- Faltar el 10% (más o menos faltar 18 días en el kínder) puede bajar el rendimiento en el primer grado y hacer que cueste más aprender a leer.
- Los estudiantes se pueden seguir atrasando aunque sólo falten uno o dos días durante varias semanas.
- Las llegadas tarde en los primeros grados pueden predecir que el estudiante tendrá mala asistencia en los años siguientes.
- La falta de asistencia a la escuela puede afectar a todos en la clase, ya que el maestro tiene que disminuir el aprendizaje para ayudar a los niños a ponerse al día.
- Las escuelas pueden perder dinero para programas educacionales porque frecuentemente la asistencia es la base para la asignación de los fondos.

Asistir regularmente a la escuela, ayuda a los niños a sentirse mejor en la escuela—y consigo mismos. Empezar a crear este hábito en la edad preescolar, los hará aprender rápidamente la importancia de ir a la escuela a la hora indicada y todos los días. La buena asistencia ayudará a los niños a tener éxito en la preparatoria, la universidad y en el trabajo.

COMO AYUDAR A SU HIJO

- Establezca una hora consistente para acostarse y la rutina de cada mañana.
- Prepare la ropa y las mochilas la noche anterior.
- Averigüe el día en que empieza la escuela y asegúrese que su hijo tenga las vacunas requeridas.
- Presente a su hijo a sus maestros y compañeros de clase antes que la escuela empiece, para ayudarle con la transición a la escuela.
- Sólo deje que su niño se quede en casa si está realmente enfermo. Tenga en mente que las quejas de un dolor de estómago o de cabeza pueden ser seña de ansiedad y no una razón para quedarse en casa.
- Si su hijo parece ansioso por ir a la escuela, hable con los maestros, consejeros u otros padres para que le aconsejen sobre cómo hacerlo sentir cómodo y motivado a asistir a la escuela.
- Prepare opciones para llegar a la escuela si algo inesperado sucede. Contacte con anterioridad un familiar, un vecino u otro padre para que le ayude en esos días.
- Evite citas médicas y viajes prolongados durante el tiempo de escuela.
- Contacte al personal de la escuela u oficiales de la comunidad para encontrar ayuda sobre transportación, vivienda, empleo o problemas de salud.

¿Cuándo las ausencias se vuelven en problema?

AUSENCIA CRÓNICA
18 días o más

SIGNOS DE AVISO
10 a 17 días

SATISFACTORIO
9 ó menos ausencias

Nota: Números asumen un año escolar de 180 días

Para más información sobre cómo preparar a su hijo para la escuela, visite attendanceworks.org y reachoutandread.org/esp

Mathematics-at-Home Plan Resources

Supports for Parental Involvement

The Benchmarks for Excellent Student Thinking (B.E.S.T.) Standards for Mathematics constitute the foundational mathematical benchmarks for Florida students, ensuring the delivery of a world-class education that prepares students for prosperous futures in college, military, and career opportunities. Parental involvement is an important part of a student's education. To foster a collaborative and supportive educational environment, the Florida Department of Education has implemented comprehensive measures to engage parents of students, including those identified as having a deficiency in mathematics. Recognizing the importance of family engagement in a student's educational journey, dedicated Parent Guides have been crafted to provide families with insights into the B.E.S.T. Mathematics Standards. For more information, please visit https://www.fldoe.org/academics/standards/subject-areas/math-science/mathematics/parent-resources.stml.

Division of Early Learning

Early education can be an important time during a student's educational career. In partnership with 30 early learning coalitions and the Redlands Christian Migrant Association, the Division of Early Learning oversees three programs: School Readiness, VPK, and Child Care Resource and Referral. These programs collectively shape students' early educational experiences of students, laying a foundation for future academic success. Parents can access resources that will help them choose the right provider for their child and family. For more information, please visit https://www.fldoe.org/schools/early-learning/parents/.

Military Families

Florida hosts the 5th largest population of active-duty service personnel spanning all five branches of the United States Military. A dependent child of an active member of the armed forces may be eligible for educational opportunities under either branch of the Family Empowerment Scholarship Program (see s. 1002.394, F.S.). Families may receive financial assistance for tutoring and access to added education options, such as transportation, private school, or other customized learning services and materials for students as young as 3 years of age. For more information, please visit https://www.fldoe.org/schools/school-choice/other-schoolchoice-options/military-families/.

Identifying and Evaluating a Student for Exceptional Student Education

When a parent or caregiver is concerned about a student who is performing significantly below grade level expectations or suspects that a student may have a disability, consider the following information:

- A medical diagnosis alone is insufficient to determine eligibility for exceptional student education. It is additional information that can be considered when collecting and reviewing student-specific data (information).
- Based on federal regulations, after completing the administration of assessments and other evaluation measures, the school district and a group of qualified professionals consisting of the parent and school staff determine if the child meets the eligibility criteria for a disability category (Title 34, s. 300.306, Code of Federal Regulations).
- If a parent submits documentation from a licensed psychologist or licensed school psychologist (Chapter 490, Florida Statutes) that demonstrates that a student has been diagnosed with dyscalculia and also identifies the student's specific areas of difficulty, then evidence-based interventions must be initiated upon receipt of that documentation (see s. 1008.25(6), F.S.).

The Bureau of Exceptional Education and Student Services provides resources to guide parents, teachers and caregivers through the process of identifying and evaluating a student who is suspected of being a student with a disability and in need of exceptional student education and related services.

RESOURCES

Nassau County School District
nassau.k12.fl.us

Florida Department of Education- Curriculum and Instruction
https://www.fldoe.org/academics/standards/index.stml

Florida B.E.S.T. Standards
https://www.cpalms.org/Standards/BEST_Standards.aspx

Khan Academy
https://www.cpalms.org/public/search/Standard

Parent Tips: Help Your Child Have a Good School Year

http://www.colorincolorado.org/article/33152/

Nassau County School District
1201 Atlantic Avenue
Fernandina Beach, FL
32034