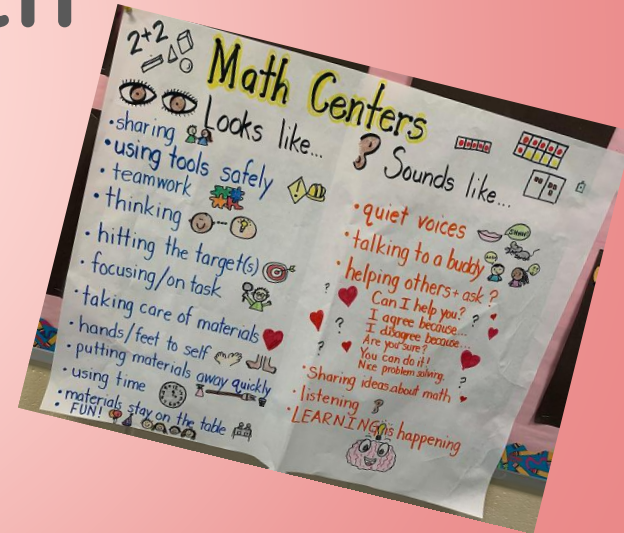
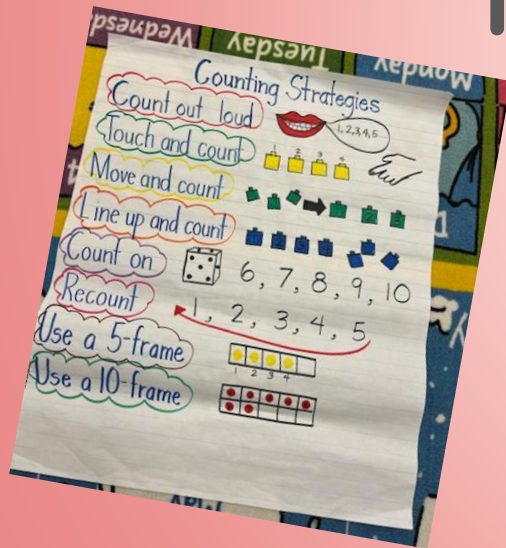


K-2 Anchor Charts

From
Illustrative Math



Important Reminders...



This is an interactive activity!
Encourage students to participate in the creation of the chart and have their voices heard.

After creating the anchor chart, display it where it can be easily viewed. The goal is for students to find and use language/strategies in future lessons

An anchor chart only anchors learning if it has a strong foundation and is referred to often. Make sure your writing is clear and bold for easy reading and quick references.

Options for creating

1. Create headings or sections ahead of time and add to it as you teach
2. Plan for student work samples to ***become*** the anchor chart
3. Create after a lesson to document strategies students will continue using

General

Math Community, Centers, Problem Solving

Math Community

Our Mathematical Community

Doing Math:

Students

- learning
- listening
- thinking
- helping each other
- talking about math
- using math tools
- asking questions

Teachers

- helping
- thinking
- listening

Norms:

Students

- fun
- look at + listen to peers when they are talking
- be kind
- have a growth mindset
- quiet voices

Teachers

- be kind
- think YET!

1 2 3 Math Community 4 0
What does it ...


Look like? 

- Working together on math tasks/centers
- Staying in our own space
- Working hard as a team!
- Trying our best!


Sound like? 

- Quietly talking in groups
- Using math vocabulary
- Sharing ideas and math tools/materials.
- Helpful and kind friends!

OUR CLASS COMMUNITY IN MATH

 Looks like...

- Whole body listening
- Kind and nice work in groups and partners
- Using hand signals
- Focused students
- Learning!

 Sounds like...

- Quiet when listening
- Math talk in groups or partners
- Listening to all speakers

OUR CLASS COMMUNITY IN MATH $+$ $=$



Looks like...

- ★ Whole body listening
- ★ Kind and nice work in groups and partners
- ★ Using hand signals
- ★ Focused students
- ★ Learning!



Sounds like...

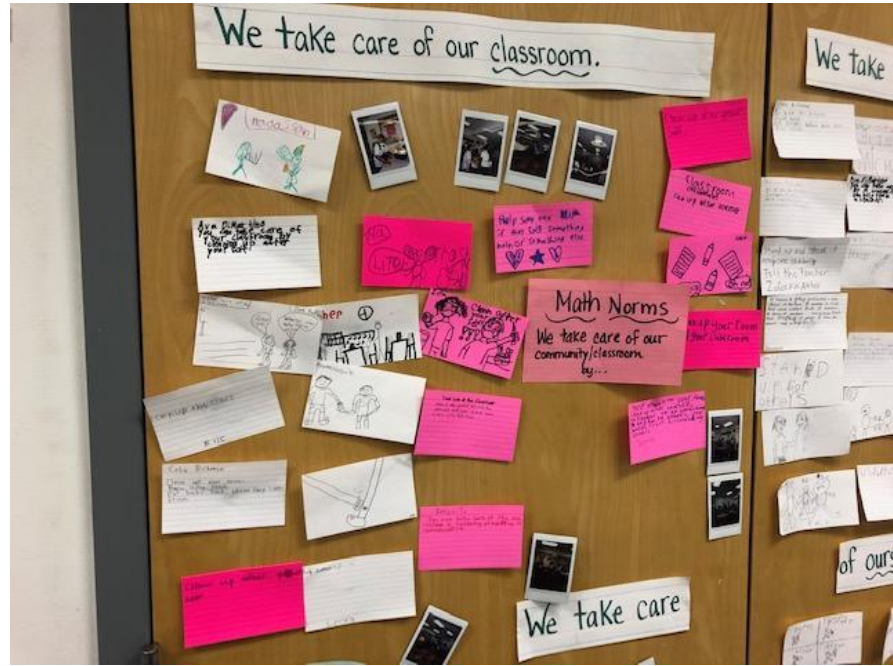
- ★ Quiet when listening
- ★ Math talk in groups or partners
- ★ Listening to all speakers

2

Math Community Norms

* take risks
* support each other

Students	Teacher
<ul style="list-style-type: none"> • One Mic • Listen to and <u>look</u> at the speaker • never give up • Listening and Sharing 	<ul style="list-style-type: none"> • Clear directions <i>* loud enough</i> • encourage • motivate • Listening and recording • opportunities to get focused



Centers

Math Centers

Room
201

Looks Like:

- sharing materials
- taking turns
- quiet voices
- helping each other
- doing math
- kind
- fun!
- respecting materials

Sounds Like:

- talking about math
- quiet voices
- explaining our work
- "How did you know that?"

Math Centers



Looks like...







- sharing
- using tools safely
- teamwork
- thinking
- hitting the target(s)
- focusing/on task
- taking care of materials
- hands/feet to self
- putting materials away quickly
- using time
- materials stay on the table
- FUN!

Sounds like...

- quiet voices
- talking to a buddy
- helping others + ask?
? Can I help you? ?
I agree because...
I disagree because...
Are you sure?
You can do it!
Nice problem solving. ?
- Sharing ideas about math
- listening ?
- LEARNING is happening


Solving Math problems

WAYS TO SOLVE MATH PROBLEMS


<p>Ten frame</p> 	<p>Connecting cubes</p> 
<p>Fingers</p> 	<p>Write an equation</p> $\underline{4} + \underline{6} = \underline{10}$ $\underline{10} - \underline{6} = \underline{4}$
<p>Count on or count back</p> 	<p>Draw a picture</p>  $\underline{2} + \underline{3} = \underline{5}$ 

Ways to Solve Math Problems


Use my fingers




Count On




Use a 10-frame


$$5 + 3 = 8$$


Use Tally Marks


$$5 + 2 = 7$$

Draw a Picture

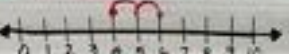

$$2 + 3 = ?$$
$$2 + 3 = 5$$

Use mental math



2 + 1 = ?


Use a number line


$$4 + 2 = 6$$

Write an equation

$$6 + 2 = 8$$

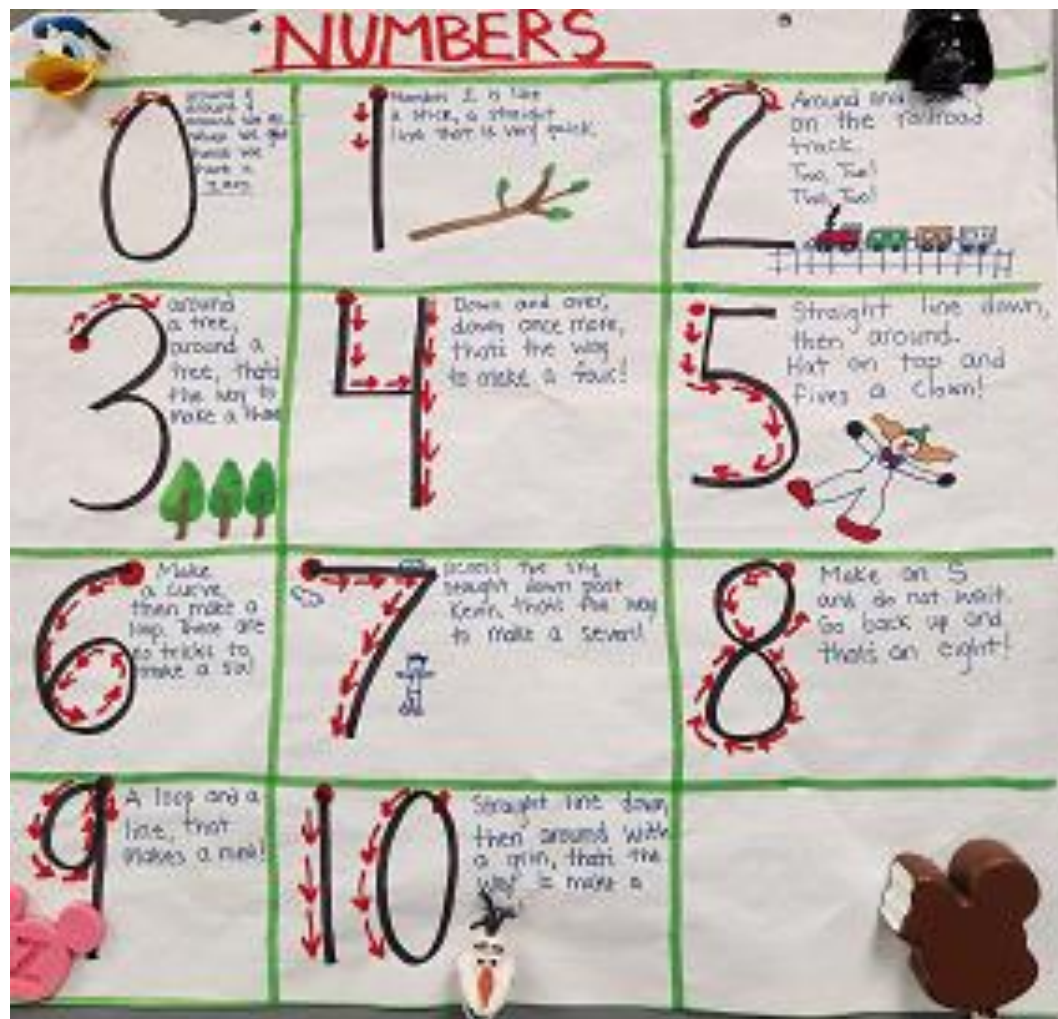
Act it out


$$5 - 1 = 4$$


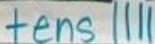

Numbers

Formation, representation, place value

Number formation





Representing Numbers

Number Words			
hundreds 	tens 	Ones 	
100 one hundred	ten 10	one 1	
200 two hundred	twenty 20	two 2	
300 three hundred	thirty 30	three 3	
400 four hundred	forty 40	four 4	
500 five hundred	fifty 50	five 5	
600 six hundred	sixty 60	six 6	
700 seven hundred	seventy 70	seven 7	
800 eight hundred	eighty 80	eight 8	
900 nine hundred	ninety 90	nine 9	





Number Words

Grade 2, Unit 5

How can numbers be represented?

4 four  

numbers words base 10 blocks tally marks

ten frame drawings dice fingers

Place Value

Grade 2, Unit 5

6 3 Digits 4 5 8 0
7 1 2 9

Place Value

Hundreds	Tens	Ones
1	3	7

Standard Form
137

Word Form
One hundred thirty seven

Base Ten Model

Expanded Form
 $100 + 30 + 7$

253

Drawing:

This number has:

- 2 hundreds
- 5 tens
- 3 ones

The expanded form of this number is:
 $200 + 50 + 3$

The three-digit number form is:
253

Place Value: Hundreds

Hundreds	Tens	Ones

_____ + _____ + _____


Place Value


ones	tens	hundreds	digits
5 →	5 →	5 →	0 2 1 6 8 3 4 5 7 9
number word	least	greatest	
six	(10), 11, 12	15, 16, (17)	
greater than	less than	equal to	
>	<	=	
odd	even	skip counting	
1, 3, 5, 7, 9	0, 2, 4, 6, 8	5, 10, 15, 20, 25, 30, 35, 40, 45, 50	
before	after	between	
(15) 16	15 (16)	15 (16) 17	


Counting/Cardinality


Counting


Counting Strategies

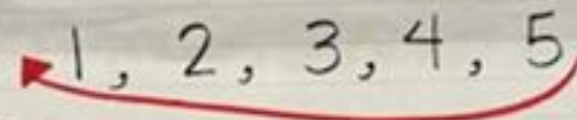
Count out loud  1, 2, 3, 4, 5...


Touch and count  1 2 3 4 End


Move and count 

Line up and count 

Count on  6, 7, 8, 9, 10

Recount  1, 2, 3, 4, 5


Use a 5-frame 

Use a 10-frame 


Comparing Numbers

Comparing Numbers

fewer When talking about objects!




less When talking about numbers!




3 is less than 9.


more



9 is more than 3.

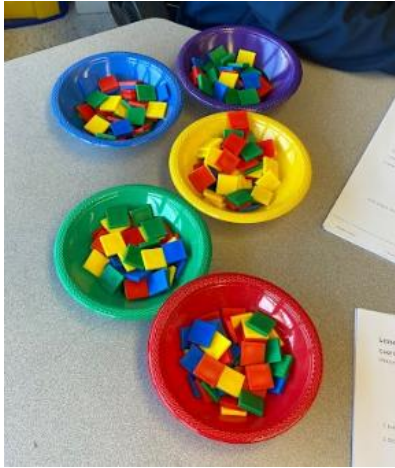
same






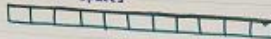
Measurement


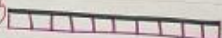
Measurement



Inch tiles for measuring

Measurement

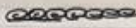
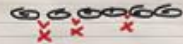
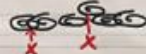
gaps :  spaces
No gaps :  no spaces

overlaps : 
No overlaps : 

$12 \text{ inches (in)} = 1 \text{ foot (ft)}$
 $3 \text{ feet (ft)} = 1 \text{ yard (yd)} = 36 \text{ inches (in)}$


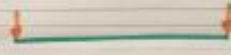


$100 \text{ centimeters (cm)} = 1 \text{ meter (m)}$

Measuring Rules

- lined up straight and touching 
- no gaps 
- no overlaps 
- when using a ruler, start at 0
- check which unit you need:
cm, inches, feet, meters, yard

Measurement

MEASUREMENT

1. Straight 
2. Start to end 
3. No gaps 
4. No overlaps 
5. Slow down, take your time



MATH VOCAB. WORDS

Length: the measurement of something end-to-end or start-to-end

Shorter: smaller length than something else




Longer: bigger length than something else



The pencil is shorter than the paperclip.

Measurement

Number Lines

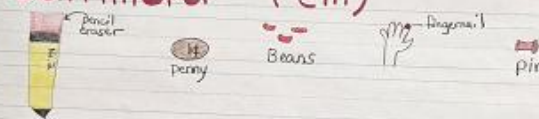


The image shows a ruler with markings from 1 to 12 and a number line below it with markings from 0 to 12.

- space between each tick mark is the same.
- a point represents a number
- the numbers on the number line are listed in order.


Measurements

centimeter (cm)



Examples of centimeter measurements: pencil eraser, penny, Beans, fingers, pin.


inches (in)



Examples of inch measurements: paper clip, fingers, book, tall or wide apple, fork.

feet (ft)


1 foot = 12 inches



Examples of foot measurements: height, door, length of a car.


Measurements

yard (yd) 3 feet = 1 yard



Football field

mile (mi) 1 mile = 1,760 yards



4 laps on a track, airplane travel, School, beach

Addition & Subtraction

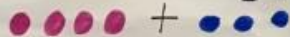
Addition and Subtraction

Add → Put together



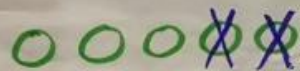
Expression → $4 + 3$

four plus 3



Subtract → Take away

Expression → $5 - 2$
five minus two



Strategy to Add: Make a 10




$$8 + 6 = 14$$

$$10 + 4 =$$

Addition in K

+ Addition +

join together
add all together
put together
total sum
plus +
in all




What it looks like ○○

● + ● ● ●
 $1 + 3 = 4$

① fish in the pond. ③ more join
How many in ALL?


□ Subtraction □



What it looks like ○○

● ● ● ●
 $4 - 1 = 3$

Rainbow to 10 Addition



0 1 2 3 4 5 5 6 7 8 9 10

How many ways can you make 10?

Subtraction

1 ten
10

2 tens
20

3 tens
30

4 tens
40

I can add and subtract tens!

$30 + 40 = 70$

$\begin{array}{cccc} \square & \square & \square & + & \square & \square & \square & \square \\ 10 & 20 & 30 & & 40 & 50 & 60 & 70 \end{array} = 7 \text{ tens}$

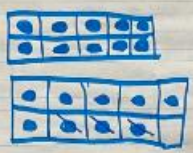
$70 - 40 = 30$

$\begin{array}{cccc} \square & \square & \square & - & \square & \square & \square \\ 10 & 20 & 30 & & 40 & 50 & 60 & 70 \end{array} = 3 \text{ tens}$

Let's Subtract
teen numbers!

I can make 10:

$19 - 3 = 16$



I can count on:

$20 - 15 = 5$

ooooo

$15 + 5 = 20$

Subtraction in Grade 2

Subtract from 100

$100 - 17 = 83$

One way

When subtracting, go from the big \rightarrow small or small \rightarrow big.

$100 - 17 = 100 - 10 - 7$

$100 - 10 = 90$

$90 - 7 = 83$

Another way

Start at 100 and go back (take away) in parts.

$45 - 27 = 18$

Subtract in parts

$45 - 27 = 45 - 20 - 7$

strips singles

$3 + 10 + 5 = 10 + 5 + 3$

$= 18$

Strategies for Addition & Subtraction

Decompose

one ten = ten "fresh" ones

Compose

ten ones = one "fresh" ten

Decomposing Strategies

$$63 - 18 = \underline{45}$$

Strategies

$$63 - 18 = \underline{45}$$

What Strategy Can I Use

<p><u>Count out loud</u></p> <p>1, 2, 3, 4, 5</p>	<p><u>Break apart</u></p> $32 + 15 =$ <p>Tens: $30 + 10 = 40$ Ones: $2 + 5 = 7$ In all: $40 + 7 = 47$</p>				
<p><u>Draw Base Tens</u></p> $77 - 48 = \underline{29}$	<p><u>Make a 10</u></p> $9 + 8 + 2 = \underline{19}$ $9 + 10 = 19$				
<p><u>Draw a picture</u></p> $4 + 7 = \underline{11}$	<p><u>Ten Frame</u></p> $4 + 9 = \underline{13}$				
<p><u>Tape Diagram</u></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; padding: 2px; text-align: center;">?</td> <td style="border: 1px solid black; padding: 2px; text-align: center;">60</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px; text-align: center;">20</td> <td style="border: 1px solid black; padding: 2px; text-align: center;">40</td> </tr> </table> <p>$20 + 40 = ?$ Addition</p>	?	60	20	40	<p><u>Count On</u> <u>Count Back</u></p> <p style="text-align: center;"><u>Number Line</u></p> <p>$60 - 40 = ?$ Subtraction</p>
?	60				
20	40				

Solving Problems with Add/Sub

Solving Equations to find the unknown number

Way 1: Han	Way 2: Mai
$17 + \underline{\quad} = 48$	$17 + \underline{\quad} = 48$
Han starts with 17...	Mai starts with 48...
He counts on!	She counts back!
⋮ ⋮ ⋮	

Tape Diagrams

A tape diagram shows me what I know.

↑ this shows me how many there are total

↑ this shows me one part.

↑ this represents what I am missing.

★ If I subtract the part from the whole, I find what's missing.

Missing Addends

"Missing Addends" Strategies

$$41 + \underline{\quad} = 84$$

Paul's Strategy (base ten blocks to add on)

$$41 + \underline{43} = 84$$



Ibrahim's Strategy (break apart)

$$41 + \underline{43} = 84$$

$$1 + \underline{3} = 4$$

$$40 + \underline{40} = 80$$

Riley's Strategy (subtract to add)
base ten blocks

$$41 + \underline{43} = 84$$

$$84 - 41 = \underline{43}$$



Addition/Subtraction on a Number Line

Number Lines

This is a number line:

Numbers get **greater** when you count this way:

Numbers get **smaller** when you count this way:

plus more count on sum

minus less count back difference

You can use a number line to find a missing number:

6 4 ? 1 7 2 ?

Number Lines

- space between each tick mark is the same.
- a point represents a number
- the numbers on the number line are listed in order.

Number Lines

This is a number line:

Numbers get **greater** when you count this way:

Numbers get **smaller** when you count this way:

Open number lines

- can start and end at any numbers
- intervals can be different

Adding + (sum)
 $342 + 165 = 507$

Subtracting - (difference)
 $375 - 124 = 251$

LIVE

number line

- use a number line to locate within 100

Number Lines

LEFT = less

RIGHT = greater +

> greater than < less than = equal to

* tick marks must be evenly spaced!

Addition & Subtraction (within 1000)-Gr 2

*** Partial Sums**

$$\begin{array}{r} \textcircled{2} \textcircled{4} \textcircled{8} \\ + \textcircled{1} \textcircled{3} \textcircled{3} \\ \hline \end{array}$$

11 ($8+3$)

70 ($40+30$)

300 ($200+100$)

381

Addition & Subtraction (within 1000)-Gr 2

Addition

$342 + 255$

place value blocks

algorithm

$$\begin{array}{r} 342 \\ +255 \\ \hline 597 \end{array}$$

* Start in the ones place

expanded form

$$\begin{array}{r} 300 + 40 + 2 \\ 200 + 50 + 5 \\ \hline 500 + 90 + 7 = 597 \end{array}$$

Key Words: sum, total, in all, how many, all together

Subtraction

$342 - 128$

place value blocks

algorithm

$$\begin{array}{r} 342 \\ -128 \\ \hline 214 \end{array}$$

* larger number on top
* start in the ones place

subtract in parts

$$\begin{array}{r} 300 + 40 + 2 \\ -100 + 20 + 8 \\ \hline 200 + 10 + 4 = 214 \end{array}$$

Key Words: difference, how many more, how many are left, take away

Addition & Subtraction Strategies

Two-digit Addition and Subtraction

<p>Standard</p> $\begin{array}{r} 43 \\ + 26 \\ \hline 69 \end{array}$ <p>* Start in the ones place.</p>	<p>Standard</p> $\begin{array}{r} 79 \\ - 15 \\ \hline 64 \end{array}$ <p>* Start in the ones place.</p>								
<p>Picture</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; padding: 5px; text-align: center;">tens </td> <td style="border: 1px solid black; padding: 5px; text-align: center;">ones xxx xxxx xx</td> </tr> <tr> <td colspan="2" style="text-align: center; padding-top: 10px;">69</td> </tr> </table>	tens 	ones xxx xxxx xx	69		<p>Picture</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; padding: 5px; text-align: center;">tens </td> <td style="border: 1px solid black; padding: 5px; text-align: center;">ones xxxx xxxxx</td> </tr> <tr> <td colspan="2" style="text-align: center; padding-top: 10px;">64</td> </tr> </table>	tens 	ones xxxx xxxxx	64	
tens 	ones xxx xxxx xx								
69									
tens 	ones xxxx xxxxx								
64									
<p>Regroup Standard</p> $\begin{array}{r} 37 \\ + 16 \\ \hline 53 \end{array}$ <p>* Start in the ones place * too many ones?</p> <p style="text-align: center;">REGROUP a ten!</p>	<p>Regroup Standard</p> $\begin{array}{r} 79 \\ - 15 \\ \hline 64 \end{array}$ <p>* Start in the ones place * Not enough ones?</p> <p style="text-align: center;">REGROUP a ten!</p>								
<p>Regroup picture</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; padding: 5px; text-align: center;">tens </td> <td style="border: 1px solid black; padding: 5px; text-align: center;">ones xxxxxx xxx xxxxx</td> </tr> <tr> <td colspan="2" style="text-align: center; padding-top: 10px;">5</td> </tr> </table>	tens 	ones xxxxxx xxx xxxxx	5		<p>Regroup picture</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; padding: 5px; text-align: center;">tens </td> <td style="border: 1px solid black; padding: 5px; text-align: center;">ones xx xxxxx</td> </tr> <tr> <td colspan="2" style="text-align: center; padding-top: 10px;">4</td> </tr> </table>	tens 	ones xx xxxxx	4	
tens 	ones xxxxxx xxx xxxxx								
5									
tens 	ones xx xxxxx								
4									

Reminder - standard algorithm begins in gr 3, until then expanded form and strategies based on place value should be used

Place Value

PLACE VALUE
vocabulary

Thousands 1,000	Hundreds 100	Tens 10	ONES 1
1	4	5	2

value
the amount each digit is worth

digit
a symbol that represents a whole number.

place value
the value of a digit based on its place in a number.

Apply

The digit in the tens place is 5
The value of the tens place is 50

I Can draw 2 digit numbers

36

10 + 10 + 10 + 6 = 36

yes!

$30 + 6 = 36$

Geometry/Shapes

Attributes of Shapes

Alike/Same



Different



Sides

Flat/Straight

Curve

Corner



Small/Skinny



Circle



Rectangle



Hexagon



Flat Shapes

Oval



Square



Triangle



2D Shapes

- are flat
- have sides and vertices



Sides



are the straight part of the shape

Vertices



are the corners where the sides meet

straight line

curved line



Shapes

How can we describe shapes?

Alike = Same $\triangle \triangle$

Different $\circ \square$

Flat

Corners

Curved

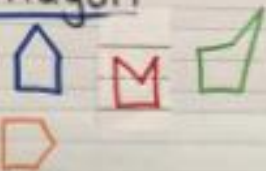
Sides

Name of shape
Quadrilateral



Attributes
4 sides
4 corners

Pentagon



5 sides
5 corners

Hexagon



6 sides
6 corners

Solid Shapes

name of shape

attributes

looks like



cube

6 square faces
8 corners/vertices
12 edges
flat and straight



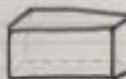
Cone

1 circle face
1 point/vertex
round



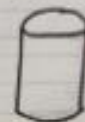
sphere

no faces
no corners/vertices
no edges
round



rectangle
prism

2 square faces
4 rectangle faces
8 corners/vertices
12 edges
flat and straight



cylinder

2 circle faces (flat)
no corners/vertices
2 edges
round



square
pyramid

1 square face
4 triangle faces
5 corners/vertices
8 edges
flat and straight

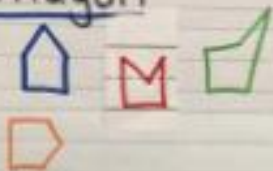


Name of shape
Quadrilateral



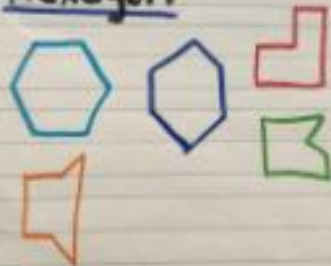
Attributes
4 sides
4 corners

Pentagon



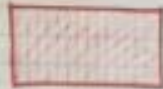
5 sides
5 corners

Hexagon



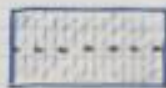
6 sides
6 corners

Equal Shares



whole

1 part



halves

2 equal parts



thirds

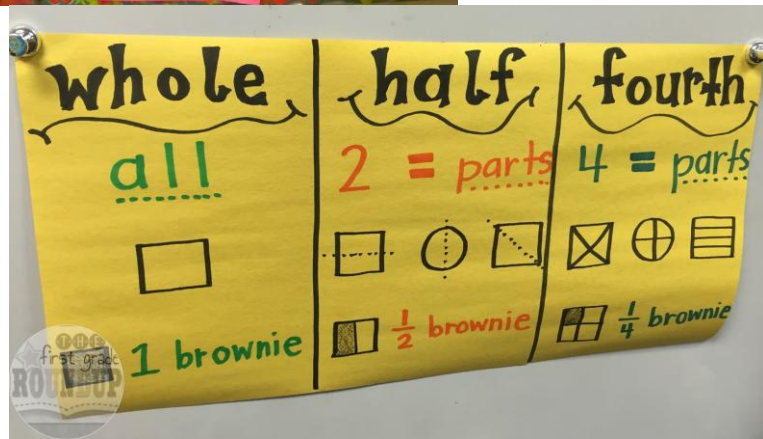
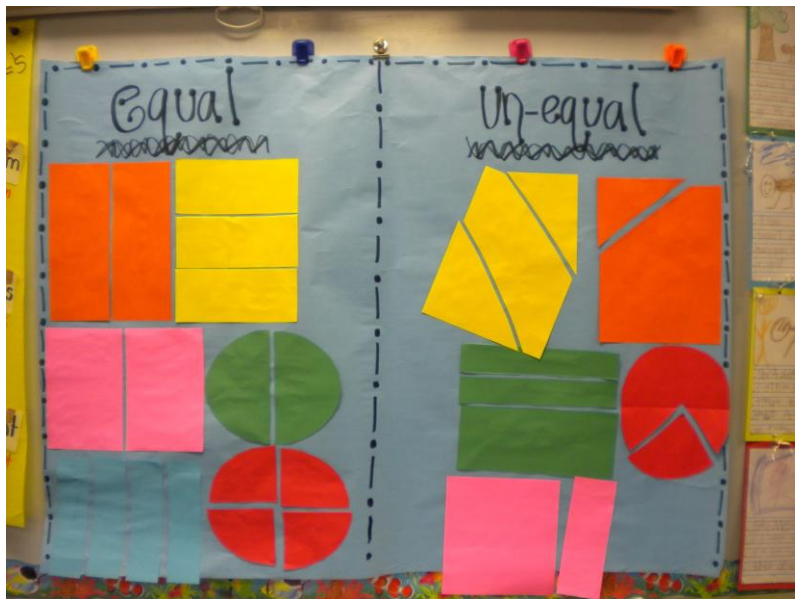
3 equal parts



quarters

fourths










4 equal parts



2D Shapes










Name	Lines	Sides	Curves / Vertices
Triangle	straight	3	3
Circle	Curvy	1	0
Square	straight	4	4
Rectangle	straight	4	4
Rhombus	straight	4	4
Trapezoid	straight	4	4
Hexagon	straight	6	6
Oval	curvy	1	0

Time/Money

Name	Front	Back	Value
Penny			1 cent 1¢
Nickel			5 cents 5¢
Dime			10 cents 10¢
Quarter			25 cents 25¢
one dollar			100 cents 100¢ \$ 1.00



Coin Identification

Name	Front	Back	Value
Penny			1¢
Nickel			5¢
dime			10¢
Quarter			25¢
dollar			\$ 1



Everyone can learn maths to high levels!

Believe in yourself, it changes what you can do!

Maths is about creativity and making sense!

Mistakes and challenge are the best times for your brain!



 youcubed Maths Class Norms

Maths is about learning not performing!

Questions & discussions deepen your mathematical understanding!

Visualize and make connections to strengthen your brain!

Depth is more important than speed!