Number and Operations	NCTM Strands	
Algebra	Number and Operations	
Geometry       Measurement       Data Analysis & Probability	Algebra	
Measurement       Data Analysis & Probability	Geometry	
Data Analysis & Probability	Measurement	
	Data Analysis & Probability	

NCTM Strands	
——[ Strand 1	
Number and Operations	
Algebra	
Geometry	
Measurement	
, , , , , , , , , , , , , , , , , , ,	

Number and Operations
Understand numbers, ways of representing numbers, relationships among numbers, and number systems
— Understand meanings of operations and how they relate to one another.
Compute fluently and make reasonable estimates.

Number and Operations	
Understand numbers, ways of representing numbers, relationships among numbers, and number systems.	
Understand meanings of operations and how they relate to one another.	
Compute fluently and make reasonable estimates.	

Number and Operations	
Understand numbers, ways of representing numbers, relationships among numbers, and number systems.	
——[ Compute fluently and make reasonable estimates	

Number and Operations	
Count with understanding and recognize "how many" in sets of objects	
Know names of numbers	
<b>2</b> = <b>3</b>	

Number and Operations	
Count with understanding and recognize "how many" in sets of objects ——[ There is an order to numbers	
0123456789	

Number and Operations	
Count with understanding and recognize "how many" in sets of objects	
One-to-one correspondence	

Number and Operations	· · · · · · · · · · · · · · · · · · ·
Count with understanding and recognize "how many" in sets of objects	
<ul> <li>One-to-one correspondence:</li> <li>4 people 4 chairs 4 plates 4 forks, etc.</li> </ul>	

Number and Operations	
Count with understanding and recognize "how many" in sets of objects	
Subitizing (instant recognition of quantity)	

Number and Operations	
Understand numbers	
Use multiple models to develop initial understandings of place value and the base-ten number system	
We use base-10 system	

	Number and Operations	
	Onderstand humbers	
L p	se multiple models to develop initial understandings of lace value and the base-ten number system	
_		

Number and Operations	
Understand numbers	
Use multiple models to develop initial understandings of place value and the base-ten number system	
Show them concretely/physically what 4 looks like	

Number and Operations	] ers
Develop understanding of the relative position and magnitude of whole numbers and of ordinal and card numbers and their connections	inal
Do you know the magnitude of 15?	

Number and Operations	
[ Understand humbers	
Develop understanding of the relative position and magnitude of whole numbers and of ordinal and cardinal numbers and their connections	
Give them a reference (in relationship to other numbers)	
-2 -1 0 1 2 3 4	

Number and Operations	<ul> <li>Who is first in line?</li> <li>The order depends on direction (face the other way in line)</li> </ul>
Develop understanding of the relative position and magnitude of whole numbers and of ordinal and cardinal numbers and their connections	
1 <sup>st</sup> , 2 <sup>nd</sup> , 3 <sup>rd</sup> , 4 <sup>th</sup> , 5 <sup>th</sup> , 6 <sup>th</sup> , 7 <sup>th</sup> , 8 <sup>th</sup> , 9 <sup>th</sup> , 10 <sup>th</sup>	

Number and Operations	the last number I counted is how many I have altogether (1,2,3,4 I have 4 total)
Understand numbers	
Develop understanding of the relative position and magnitude of whole numbers and of ordinal and cardinal numbers and their connections Cardinal Cardinal	
1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14	

Number and Operations	
Develop understanding of the relative position and magnitude of whole numbers and of ordinal and cardinal numbers and their connections	
Have examples up all around the class to quickly point to	

Number and Operations	
Develop understanding of the relative position and magnitude of whole numbers and of ordinal and cardinal numbers and their connections	
How many letters in your name?	
Ĭ 2 3 4	

Number and Operations	
Develop a sense of whole numbers and represent and use them in flexible ways, including relating, composing, and decomposing numbers	
5 Little Monkeys Jumping on the Bed	
5 Green & Speckled Frogs	

Number and Operations	Imbers
Develop a sense of whole numbers and represer use them in flexible ways, including relating, con and decomposing numbers	nt and nposing,
Decomposing; the quantity 5 can be:	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	

Number and Operations	
Connect number words and numerals to the quantities they represent, using various physical models and representations	
<ul> <li>—[ 1) numeral</li> <li>—[ 2) quantity</li> <li>—[ 3) number word all in one place</li> </ul>	

Number and Operations	
Understand numbers	
Connect number words and numerals to the quantities they represent, using various physical models and representations I They need to count it before you can add the symbol, number or the number word	

Number and Operations	
Connect number words and numerals to the quantities they represent, using various physical models and representations	
Connect numeral (0-9) to quantity	

Number and Operations	
Understand and represent commonly used fractions, such as 1/4, 1/3, and 1/2.	

Number and Opera	tions	
	erstand numbers	
L		
Understand and represent commonly such as $1/4$ , $1/3$ , and $1/2$	vused fractions,	
	1.1	
Talk about fractions		
during snack time.		

Number and Operations	
Understand and represent commonly used fractions, such as 1/4, 1/3, and 1/2.	
Give non-examples.	

Number and Operations	Y.C. Ch.2 Principles in teaching math
We haven't even talked about	
adding yet!	

Number and Operations	
Understand numbers, ways of representing numbers, relationships among numbers, and number systems	
<ul> <li>Understand meanings of operations and how they relate to one another.</li> </ul>	

Number and Operations <b>2</b>	
Understand numbers, ways of representing numbers, relationships among numbers, and number systems.	
— Understand meanings of operations and how they relate to one another.	
Compute fluently and make reasonable estimates.	

Number and Operations 2	
Understand various meanings of addition and subtraction of whole numbers and the relationship between the two operations.	
3+2 = 5 5-2 = 3 5-3 = 2	

Number and Operations 2
Jnderstand various meanings of addition and subtraction of whole numbers and the relationship between the two operations.
7

Number and Operations 2	
Understand the effects of adding and subtracting whole numbers.	
Adding	

Number and Operations <b>2</b>	
Understand meanings	
Understand the effects of adding and subtracting whole numbers.	

Number and Operations 2	
Understand meanings	
Understand situations that entail multiplication and	
equally.	
Equal sets during snack.	

Number and Operations 2	
Understand situations that entail multiplication and division, such as equal groupings of objects and sharing equally.	
Equal sets for backpacks.	

Number and Operations <b>2</b>	Y.C. Ch.2 Principles in teaching math
Make it	
relevant to them	

Number and Operations	
Understand numbers, ways of representing numbers, relationships among numbers, and number systems.	
— Understand meanings of operations and how they relate to one another.	

Number and Operations 3
Understand numbers, ways of representing numbers, relationships among numbers, and number systems.
Understand meanings of operations and how they relate to one another.
Compute fluently and make reasonable estimates.

Number and Operations	
Compute Fluently	
Develop and use strategies for whole-number computations, with a focus on addition and subtraction.	
Teach a <u>strategy</u> : "I can move this counter to this compartment to help me count."	

Number and Operations	
Compute Fluently	
Develop fluency with basic number combinations for addition and subtraction.	
Memorize it. (Don't get lost in 5 <sup>th</sup> grade.)	
Contraction of the second seco	

Number and Operations —[ Compute Fluently	3_
lop fluency with basic number combinations for	y∕ or
<ul> <li>Idition and subtraction.</li> <li>Avoid math anxiety by developing a good foundation of the concept.</li> </ul>	_
1000	

Number and Operations	
Compute Fluently	
Develop fluency with basic number combinations for addition and subtraction	
Observe students in the classroom before you start lesson planning.	

Number and Operations —[ Compute Fluently 3	
Use a variety of methods and tools to compute, including objects, mental computation, estimation, paper and pencil, and calculators.	
Add this into your daily routine	

Number and Operations —[ Compute Fluently 3	
Use a variety of methods and tools to compute, including objects, mental computation, estimation, paper and pencil, and calculators. Practice estimating numbers, distance, & size	

Number and Operations	
Compute Fluently	
Use a variety of methods and tools to compute, including objects, mental computation, estimation, paper and pencil, and calculators.	

Number and Operations 3	
Use a variety of methods and tools to compute, including objects, mental computation, estimation, paper and pencil, and calculators.	
Put numbers and rulers in writing center.	
3 4 5 6 7 8 9 10 11 12 13 14 5 15	

Number and	Operations — Compute Fluently
Use a variety of methods an including objects, mental c paper and pencil, and calc	nd tools to compute, omputation, estimation, Jlators.
— ( Variety of manipulati (many, many!)	ves

Number and Operations 3	
It needs to make	
Sense to them!	