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SUBJECT AREA CONNECTION: ______ Math _____DATE: December 30, 2014 AUTHOR: Charlene Tate Nichols CONTRIBUTORS: _____

Domain:		Kindergarten Content Standard
Social and Intelle	ectual Habits	
Develop a	Self-Awareness	Self Awareness can be supported through the following standards:
positive self-	SMP 1,3	
concept		

CCSS.Math.Practice.MP1 Make sense of problems and persevere in solving them.

Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.

CCSS.Math.Practice.MP3 Construct viable arguments and critique the reasoning of others.

Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. They justify their conclusions, communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until later grades. Later, students learn to determine domains to which an argument applies. Students at all grades can listen or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.

Sense of self as	Sense of self as competent and capable can be supported through the following standards:
competent and capable	
SMP 1,3,6,7	

CCSS.Math.Practice.MP1 Make sense of problems and persevere in solving them.

Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.

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		October 2014		Do Not Reproduce Or Distr		Permission***	abits
SUBJECT AR	EA CONNECTION	Math	DATE:	December 30, 2014	AUTHOR:	Charlene Tate Nichols	CONTRIBUTORS:
Domain: Social and Intelled	tual Habits			Ki	ndergarten Cor	itent Standard	
CCSS.Math.Practic	ce.MP3 Construct v	viable arguments and critique the	easoning of	others.			
statements to exp hem to others, ar proficient student s. Elementary student or made formal ur	lore the truth of th nd respond to the a s are also able to co dents can construct ntil later grades. Lat	eir conjectures. They are able to an irguments of others. They reason in ompare the effectiveness of two pla t arguments using concrete referen	alyze situatic ductively abc ausible argum ts such as ob	ons by breaking them into out data, making plausible nents, distinguish correct l jects, drawings, diagrams,	cases, and can arguments tha ogic or reasoni and actions. Su	recognize and use countere t take into account the con- ng from that which is flawed uch arguments can make se	ey make conjectures and build a logical progression of examples. They justify their conclusions, communicate text from which the data arose. Mathematically d, and—if there is a flaw in an argument—explain what nse and be correct, even though they are not generalize arguments of others, decide whether they make sense
CSS.Math.Practic	ce.MP6 Attend to p	precision					
choose, including calculate accurate other. By the time CCSS.Math.Practic Mathematically pr sort a collection of expression $x^2 + 9x$ solving problems. For example, they	using the equal sign ly and efficiently, e they reach high sc ce.MP7 Look for an roficient students lo f shapes according + 14, older student They also can step can see 5 - $3(x - y)^2$	n consistently and appropriately. The xpress numerical answers with a de hool they have learned to examine ad make use of structure. The pok closely to discern a pattern or so to how many sides the shapes have ts can see the 14 as 2 × 7 and the 9 back for an overview and shift perso as 5 minus a positive number time	ey are carefu egree of preci- claims and m tructure. You e. Later, stude as 2 + 7. They pective. They as a square ar	Il about specifying units o ision appropriate for the p nake explicit use of definition and students, for example, ents will see 7 × 8 equals t y recognize the significance y can see complicated thin nd use that to realize that	f measure, and problem contex ions. might notice the well remem e of an existing ngs, such as som its value canno	labeling axes to clarify the o t. In the elementary grades, nat three and seven more is bered $7 \times 5 + 7 \times 3$, in prepa line in a geometric figure a ne algebraic expressions, as	asoning. They state the meaning of the symbols they correspondence with quantities in a problem. They , students give carefully formulated explanations to eac a the same amount as seven and three more, or they ma aration for learning about the distributive property. In the nd can use the strategy of drawing an auxiliary line for single objects or as being composed of several objects. al numbers x and y.
Develop a	Sense of self as	Sense of self as a learner can be	upported th	rough the following stand	lards:		
oositive attitude toward earning	a learner SMP 1,3,5						
-	ce.MP1 Make sense	e of problems and persevere in so	ving them.				
Mathematically pr conjectures about forms of the origir ransform algebra	oficient students s the form and mean al problem in orde ic expressions or ch	tart by explaining to themselves the ning of the solution and plan a solu er to gain insight into its solution. The nange the viewing window on their	e meaning of tion pathway ley monitor a graphing calo	rather than simply jumpin and evaluate their progres culator to get the information	ng into a solutions and change controls they need.	on attempt. They consider a ourse if necessary. Older stu Mathematically proficient s	givens, constraints, relationships, and goals. They make analogous problems, and try special cases and simpler udents might, depending on the context of the problem students can explain correspondences between ds. Younger students might rely on using concrete

equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.

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SUBJECT AREA CONN	ECTION:	Math	DATE: December 30, 2014	AUTHOR:	Charlene Tate Nichols	CONTRIBUTORS:
Domain: Social and Intellectual Habit	ts		Kir	idergarten Cor	itent Standard	
CCSS.Math.Practice.MP3 Co	onstruct viable a	guments and critique the	reasoning of others.			
statements to explore the tru them to others, and respond proficient students are also a is. Elementary students can d or made formal until later gr and ask useful questions to d CCSS.Math.Practice.MP5 Us Mathematically proficient str spreadsheet, a computer alg decisions about when each d functions and solutions gene that technology can enable t	uth of their conju- d to the argumen able to compare construct argum rades. Later, stud clarify or improve a appropriate to udents consider gebra system, a s of these tools mig- erated using a gra them to visualize	ectures. They are able to an its of others. They reason in the effectiveness of two pl ents using concrete referen lents learn to determine do the arguments. Pols strategically. the available tools when so tatistical package, or dynar ght be helpful, recognizing aphing calculator. They det the results of varying assu	nalyze situations by breaking them into inductively about data, making plausible lausible arguments, distinguish correct le ints such as objects, drawings, diagrams, omains to which an argument applies. St plving a mathematical problem. These to nic geometry software. Proficient stude both the insight to be gained and their l rect possible errors by strategically using mptions, explore consequences, and co	cases, and can arguments tha ogic or reasonin and actions. Su udents at all gu ools might inclu nts are sufficie imitations. For estimation an mpare predicti	recognize and use counteres t take into account the cont ng from that which is flawed uch arguments can make ser rades can listen or read the a nde pencil and paper, concre ntly familiar with tools appro example, mathematically pind other mathematical know ons with data. Mathematica	ey make conjectures and build a logical progression of xamples. They justify their conclusions, communicate ext from which the data arose. Mathematically l, and—if there is a flaw in an argument—explain what it has and be correct, even though they are not generalized arguments of others, decide whether they make sense, ete models, a ruler, a protractor, a calculator, a opriate for their grade or course to make sound roficient high school students analyze graphs of ledge. When making mathematical models, they know Ily proficient students at various grade levels are able to use technological tools to explore and deepen their
Curiosity	and Curios	ity and initiative can be su	pported through the following standar	de.		
initiative SMP 1,7						
CCSS.Math.Practice.MP1 Ma	ake sense of pro	blems and persevere in so	lving them.			
conjectures about the form a forms of the original problem transform algebraic expression	and meaning of t n in order to gair ons or change th	the solution and plan a solution insight into its solution. The viewing window on their	ution pathway rather than simply jumpir hey monitor and evaluate their progress graphing calculator to get the informat	ng into a solution and change co ion they need.	on attempt. They consider an ourse if necessary. Older stu Mathematically proficient s	ivens, constraints, relationships, and goals. They make nalogous problems, and try special cases and simpler dents might, depending on the context of the problem, tudents can explain correspondences between ds. Younger students might rely on using concrete

objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.

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SUBJECT AREA CONNECTIO	N:Math	DATE: December 30, 2014	AUTHOR:	Charlene Tate Nichols	CONTRIBUTORS:
Domain:			Kindergarten Co	ntent Standard	
Social and Intellectual Habits					
CCSS.Math.Practice.MP3 Construct	t viable arguments and critique th	ne reasoning of others.			
Mathematically proficient students	understand and use stated assum	nptions, definitions, and previously esta	olished results in	constructing arguments. Th	ney make conjectures and build a logical progression of
				-	examples. They justify their conclusions, communicate
· · · · · ·			-		text from which the data arose. Mathematically
•	•		-	-	ed, and—if there is a flaw in an argument—explain what it
					ense and be correct, even though they are not generalized
		domains to which an argument applies	Students at all g	rades can listen or read the	e arguments of others, decide whether they make sense,
and ask useful questions to clarify o	or improve the arguments.				
CCSS.Math.Practice.MP7 Look for	and make use of structure.				
		-			s the same amount as seven and three more, or they may
•					aration for learning about the distributive property. In the
•					and can use the strategy of drawing an auxiliary line for
• •					single objects or as being composed of several objects.
For example, they can see 5 - $3(x - y)$	y) ² as 5 minus a positive number ti	mes a square and use that to realize the	at its value canno	of be more than 5 for any re	al numbers x and y.
Cooperation	Cooperation during learning e	xperiences can be supported through t	he following sta	ndards:	
during learning					
experiences					
SMP 3,6					
CCSS.Math.Practice.MP3 Construc					
					ney make conjectures and build a logical progression of
-				-	examples. They justify their conclusions, communicate
•	-		-		ntext from which the data arose. Mathematically
			-	•	ed, and—if there is a flaw in an argument—explain what it ense and be correct, even though they are not generalized
•				-	arguments of others, decide whether they make sense,
and ask useful questions to clarify of		domains to which an argument applies	Students at all g	rades can instell of read the	arbaments of others, accide whether they make selise,
CCSS.Math.Practice.MP6 Attend to					

Mathematically proficient students try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They are careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions.

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SUBJECT AR	REA CONNECTION:	Math	<mark>DATE:</mark>	December 30, 2014	<mark>AUTHOR:</mark>	Charlene Tate Nichols	_ CONTRIBUTORS:
Domain:				Kir	ndergarten Cor	ntent Standard	
Social and Intelle	ctual Habits						
Identify and	Identifying and	Identifying and understanding	emotions can b	e supported through the	following stan	dards:	
understand	Understanding						
emotions of self	Emotions						
and others					_		
	Empathy	Empathy can be supported thr	ough the follow	ving standards:			
	SMP 3						
CCSS.Math.Practi	ce.MP3 Construct v	iable arguments and critique th	e reasoning of o	others.			
Mathematically p	roficient students u	nderstand and use stated assum	ptions, definitio	ns, and previously establis	hed results in	constructing arguments. Th	ey make conjectures and build a logical progression of
statements to exp	olore the truth of the	eir conjectures. They are able to	analyze situatio	ns by breaking them into	cases, and can	recognize and use countere	examples. They justify their conclusions, communicate
them to others, a	nd respond to the a	rguments of others. They reason	inductively abo	out data, making plausible	arguments tha	t take into account the con	text from which the data arose. Mathematically
•		•			U	0	d, and—if there is a flaw in an argument—explain what it
•							nse and be correct, even though they are not generalized
	-		domains to whic	ch an argument applies. St	udents at all g	rades can listen or read the	arguments of others, decide whether they make sense,
		improve the arguments.					
Develop positive		Social Awareness and Interper	sonal Skills can	be supported through the	e following sta	ndards:	
interpersonal	Awareness and						
relationships	Interpersonal Skills						
	SMP 3						
CCSS.Math.Practi		iable arguments and critique th	e reasoning of a	others.			
		-			hed results in	constructing arguments. Th	ey make conjectures and build a logical progression of
							examples. They justify their conclusions, communicate
						-	text from which the data arose. Mathematically
		-			-		d, and—if there is a flaw in an argument—explain what it
•					-	-	nse and be correct, even though they are not generalized
or made formal u	ntil later grades. Lat	er, students learn to determine	domains to whic	ch an argument applies. St	udents at all g	rades can listen or read the	arguments of others, decide whether they make sense,
and ask useful qu	estions to clarify or i	improve the arguments.					
	Responsible	Responsible decision making a	nd social proble	em solving can be support	ed through the	e following standards:	
	decision making						
	and social						

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Domain:				Kin	dergarten Con	tent Standard	
Social and Intelle			<u> </u>				
	Conflict	Conflict Resolution can be support	ed through	the following standards:			
	Resolution SMP 1						
CCSS.Math.Practi	-	e of problems and persevere in solv	ing them.				
			-	a problem and looking for	entry points to	its solution. They analyze g	ivens, constraints, relationships, and goals. They make
			-				nalogous problems, and try special cases and simpler
•					-		dents might, depending on the context of the problem,
-	-		•		-		tudents can explain correspondences between
							ls. Younger students might rely on using concrete
						_	od, and they continually ask themselves, "Does this
make sense?" The	ey can understand th	he approaches of others to solving co	omplex prob	lems and identify correspo	ondences betw	een different approaches.	
Executive	Working	Working Memory & Meta-cognitio	n can be su	pported through the follo	wing standard	5:	
Function	Memory and						
	Meta-cognition						
	SMP 1, 3, 5, 6, 7						
		K.CC.A.1					
		Count to 100 by ones and by tens					
		K.CC.A.2					
		Count forward beginning from a give	ven number	within the known sequence	ce (instead of h	aving to begin at 1).	
		K.OA.A1			1		
			i with object	s, fingers, mental images,	drawings ¹ , sou	nds (e.g., claps), acting out	situations, verbal explanations, expressions, or
		equations. K.OA.A3					
			oual to 10 ir	nto pairs in more than one	way eg by u	sing objects or drawings an	d record each decomposition by a drawing or equation
		(e.g., $5 = 2 + 3$ and $5 = 4 + 1$).		to puils in more than one	way, c.g., by a		
		K.NBT.A.1					
		Compose and decompose numbers	from 11 to	19 into ten ones and some	e further ones,	e.g., by using objects or dra	wings, and record each composition or decomposition
		by a drawing or equation (such as 1	.8 = 10 + 8);	understand that these nur	mbers are com	posed of ten ones and one,	two, three, four, five, six, seven, eight, or nine ones.
		K.MD.B.3					
		Classify objects into given categorie	es; count the	numbers of objects in each	ch category and	d sort the categories by cou	nt.
		K.GB.6					
		Compose simple shapes to form lar	ger shapes.	For example, "Can you joi	n these two tric	ingles with full sides touchin	ng to make a rectangle?"

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SUBJECT AREA CONNECTION: Math DATE: December 30, 2014 AUTHOR: Charlene Tate Nichols CONTRIBUTORS:

Domain: Social and Intellectual Habits

Kindergarten Content Standard

Social and Intellectual Habits

CCSS.Math.Practice.MP1 Make sense of problems and persevere in solving them.

Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.

CCSS.Math.Practice.MP3 Construct viable arguments and critique the reasoning of others.

Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. They justify their conclusions, communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until later grades. Later, students learn to determine domains to which an argument applies. Students at all grades can listen or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.

CCSS.Math.Practice.MP5 Use appropriate tools strategically.

Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically proficient high school students analyze graphs of functions and solutions generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. Mathematically proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems. They are able to use technological tools to explore and deepen their understanding of concepts.

CCSS.Math.Practice.MP6 Attend to precision.

Mathematically proficient students try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They are careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions.

SUBJECT A	REA CONNECTION	: Math DATE: December 30, 2014 AUTHOR: Charlene Tate Nichols CONTRIBUTORS:
Domain:		Kindergarten Content Standard
Social and Intell		
		nd make use of structure.
	•	book closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may
		to how many sides the shapes have. Later, students will see 7 × 8 equals the well remembered 7 × 5 + 7 × 3, in preparation for learning about the distributive property. In the ts can see the 14 as 2 × 7 and the 9 as 2 + 7. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for
•	•	back for an overview and shift perspective. They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects.
		² as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers x and y.
	Cognitive	Cognitive Flexibility can be supported through the following standards:
	Flexibility	
	SMP 1, 2, 3, 4, 5, 7	
		K.OA.A1
		Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations
		K.OA.A3 Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation
		(e.g., $5 = 2 + 3$ and $5 = 4 + 1$).
		K.NBT.A.1
		Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition
		by a drawing or equation (such as 18 = 10 + 8); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.
		K.MD.A.1
		Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.
		K.MD.A.2 Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference. For example,
		directly compare the heights of two children and describe one child as taller/shorter.
		K.MD.B.3
		Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.
		K.GA.1
		Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of,
		behind, and next to.
		K.GA.2
		Correctly name shapes regardless of their orientations or overall size. K.GB.4
		Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g.,

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SUBJECT AREA CONNECTION	Math	DATE: December 3			CONTRIBUTORS:
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Domain:			Kindergarten Co	ontent Standard	
Social and Intellectual Habits					
	K.GB.5 Model shapes in the world by bui	lding shapes from compone	nts (e.g., sticks and clay b	palls) and drawing shapes.	
CCSS.Math.Practice.MP1 Make sense	e of problems and persevere in so	ving them.			
Mathematically proficient students st	art by explaining to themselves th	e meaning of a problem and	looking for entry points	to its solution. They analyze g	givens, constraints, relationships, and goals. They make
conjectures about the form and mean	ning of the solution and plan a solu	tion pathway rather than sir	nply jumping into a solut	ion attempt. They consider a	analogous problems, and try special cases and simpler
					udents might, depending on the context of the problem,
					students can explain correspondences between
					ds. Younger students might rely on using concrete
	•			-	hod, and they continually ask themselves, "Does this
make sense?" They can understand the CCSS.Math.Practice.MP2 Reason abs		complex problems and iden	tity correspondences bet	ween different approaches.	
		elationshins in problem situ	ations. They bring two co	molementary abilities to bea	ar on problems involving quantitative relationships: the
					eir own, without necessarily attending to their
					lved. Quantitative reasoning entails habits of creating a
-					and knowing and flexibly using different properties of
operations and objects.					
CCSS.Math.Practice.MP3 Construct v	iable arguments and critique the	reasoning of others.			
statements to explore the truth of the them to others, and respond to the a proficient students are also able to co is. Elementary students can construct	eir conjectures. They are able to an rguments of others. They reason ir ompare the effectiveness of two pl arguments using concrete referen er, students learn to determine do improve the arguments.	alyze situations by breaking ductively about data, makin ausible arguments, distingui ts such as objects, drawings	them into cases, and car g plausible arguments th sh correct logic or reasor , diagrams, and actions.	n recognize and use countere nat take into account the cont ning from that which is flawed Such arguments can make set	ey make conjectures and build a logical progression of examples. They justify their conclusions, communicate text from which the data arose. Mathematically d, and—if there is a flaw in an argument—explain what it nse and be correct, even though they are not generalized arguments of others, decide whether they make sense,
					grades, this might be as simple as writing an addition
					nunity. By high school, a student might use geometry to
. .					y what they know are comfortable making assumptions
					actical situation and map their relationships using such
of the situation and reflect on wheth					inely interpret their mathematical results in the context
of the situation and reflect on wheth					

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Domain:	Kindergarten Content Standard
Social and Intellectual Habits	
spreadsheet, a computer algebra syst decisions about when each of these to functions and solutions generated us that technology can enable them to w identify relevant external mathemati understanding of concepts. CCSS.Math.Practice.MP7 Look for an Mathematically proficient students lo sort a collection of shapes according	tonsider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a tem, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically proficient high school students analyze graphs of sing a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know visualize the results of varying assumptions, explore consequences, and compare predictions with data. Mathematically proficient students at various grade levels are able to ical resources, such as digital content located on a website, and use them to pose or solve problems. They are able to use technological tools to explore and deepen their
	back for an overview and shift perspective. They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. ² as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers <i>x</i> and <i>y</i> .
Self-regulation	Self-regulation of impulses and emotional reaction can be supported through the following standards:
of impulses and	
emotional	
reaction	
SMP 1, 3	
Mathematically proficient students st conjectures about the form and mean forms of the original problem in orde	e of problems and persevere in solving them. tart by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make ning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler er to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem,
÷ ,	hange the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between s, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete

objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.

		October 2014 Draft – Standards for K-3 Social, Emotional, and Intellectual Habits ***Please Do Not Reproduce Or Distribute Without Permission***
SUBJECT ARI	EA CONNECTION:	MathDATE: December 30, 2014 AUTHOR: Charlene Tate Nichols CONTRIBUTORS:
Domain:		Kindergarten Content Standard
Social and Intellec		
		iable arguments and critique the reasoning of others.
		nderstand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of
		eir conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. They justify their conclusions, communicate
	•	rguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically
		mpare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it
•		arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized
		er, students learn to determine domains to which an argument applies. Students at all grades can listen or read the arguments of others, decide whether they make sense,
and ask useful que		mprove the arguments.
	Managing	Managing attention and behavior can be supported through the following standards:
	attention and	
	behavior	
	SMP 1, 6	
		e of problems and persevere in solving them.
		art by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make
		ning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler
		to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem,
-	•	ange the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between
		, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete
•		lize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this
	•	ne approaches of others to solving complex problems and identify correspondences between different approaches.
	e.MP6 Attend to p	
		y to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they
-	• • •	consistently and appropriately. They are careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They press numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each
		nool they have learned to examine claims and make explicit use of definitions.
	Critical and	
Logic and Reasoning	analytical	Critical and analytical thinking can be supported through the following standards:
SMP ALL	thinking	
JIVIT ALL	SMP 1, 3	
	JIVIE I, J	

					ibute Without Perm			
SUBJECT	AREA CONNECTION	Math	<mark>DATE:</mark>	December 30, 2014	<mark>AUTHOR:</mark> Ch	arlene Tate Nichols	CONTRIBUTORS:	
Domain:				Kir	ndergarten Conten	t Standard		
	ellectual Habits			KI				
CSS.Math.Pr	actice.MP1 Make sens	e of problems and persevere in s	olving them.					
conjectures ab forms of the o transform alge equations, ver objects or pict make sense?" CCSS.Math.Pra Mathematicall statements to	bout the form and mea riginal problem in order ebraic expressions or ch bal descriptions, tables ures to help conceptua They can understand t actice.MP3 Construct of ly proficient students u explore the truth of th	art by explaining to themselves the ning of the solution and plan a solution of the solution and plan a solution. The ange the viewing window on the and graphs or draw diagrams of lize and solve a problem. Mathem the approaches of others to solving tiable arguments and critique the anderstand and use stated assumption for a solution of the states and the solution the states and the states are able to a solution of the states and the solution of the states are able to a solution of the states and the states are able to a solution of the states and the states are able to a solution of the states ar	ution pathway r They monitor an ir graphing calcu important featu natically proficie g complex probl e reasoning of o ptions, definition	ather than simply jumpin d evaluate their progress lator to get the informat ires and relationships, gra nt students check their a ems and identify corresp thers. s, and previously establis	ng into a solution at s and change course tion they need. Mat aph data, and sear answers to problem bondences between shed results in cons	tempt. They consider a e if necessary. Older stu hematically proficient s ch for regularity or trend s using a different meth different approaches. tructing arguments. The	nalogous problems, and try dents might, depending on tudents can explain corresp ds. Younger students might od, and they continually as ey make conjectures and bu	y special cases and simpler the context of the problem, bondences between rely on using concrete sk themselves, "Does this uild a logical progression of
proficient stud is. Elementary or made forma	lents are also able to co students can construct al until later grades. La	rguments of others. They reason ompare the effectiveness of two p arguments using concrete refere er, students learn to determine d improve the arguments.	plausible argume ents such as obje	ut data, making plausible ents, distinguish correct lo ects, drawings, diagrams,	ogic or reasoning fr and actions. Such a	om that which is flawec irguments can make ser	l, and—if there is a flaw in a nse and be correct, even the	an argument—explain what ough they are not generalize
proficient stud is. Elementary or made forma	lents are also able to co students can construct al until later grades. La	ompare the effectiveness of two p arguments using concrete refere er, students learn to determine d	value of the second sec	and quantities; connect c	ogic or reasoning fr and actions. Such a tudents at all grade ough the following	om that which is flawed irguments can make ser s can listen or read the s standards: ity.	l, and—if there is a flaw in a nse and be correct, even the arguments of others, decide	an argument—explain what ough they are not generalize e whether they make sense,

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Domain:		Kindergarten Content Standard
Social and Intellectual Habits		
Logic and		K.G.B.6
Reasoning		Compose simple shapes to form larger shapes. For example, "Can you join these two triangles with full sides touching to make a rectangle?"
SMP ALL		

CCSS.Math.Practice.MP1 Make sense of problems and persevere in solving them.

Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.

CCSS.Math.Practice.MP2 Reason abstractly and quantitatively.

Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to *decontextualize*—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to *contextualize*, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.

CCSS.Math.Practice.MP3 Construct viable arguments and critique the reasoning of others.

Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. They justify their conclusions, communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until later grades. Later, students learn to determine domains to which an argument applies. Students at all grades can listen or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.

CCSS.Math.Practice.MP4 Model with mathematics.

Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.

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SUBJECT AR	EA CONNECTION	I: MathDATE: December 30, 2014 AUTHOR: Charlene Tate Nichols CONTRIBUTORS:								
Domain:		Kindergarten Content Standard								
Social and Intelle	ctual Habits									
Mathematically pro- spreadsheet, a co- decisions about we functions and solut that technology ca- identify relevant of CCSS.Math.Practi Mathematically pro- choose, including calculate accurate other. By the time CCSS.Math.Practi Mathematically pro- sort a collection of expression $x^2 + 9x$ solving problems. For example, they CCSS.Math.Practi Mathematically pro- repeating the same (1, 2) with slope 3 might lead them to They continually of	roficient students of mputer algebra syst when each of these ations generated us an enable them to external mathematic concepts. ce.MP6 Attend to roficient students to using the equal sig ely and efficiently, e e they reach high so ce.MP7 Look for an roficient students le f shapes according (+ 14, older student They also can step () can see 5 - 3(x - y) ce.MP8 Look for an roficient students r he calculations over a, middle school stu to the general form evaluate the reason	Try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they gn consistently and appropriately. They are careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each chool they have learned to examine claims and make explicit use of definitions. nd make use of structure . look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may is to how many sides the shapes have. Later, students will see 7×8 equals the well remembered $7 \times 5 + 7 \times 3$, in preparation for learning about the distributive property. In the is can see the 14 as 2×7 and the 9 as $2 + 7$. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for to back for an overview and shift perspective. They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. P^2 as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers x and y . nd express regularity in repeated reasoning . notice if calculations are repeated, and look both for general methods and for shortcuts. Upper elementary students might notice when dividing 25 by 11 that they are r and over again, and conclude they have a repeating decimal. By paying attention to the calculation of slope as they repeatedly check whether points are on the line through idents might abstract the equation $(y - 1)(x^2 + x + 1)$ and $(x - 1)(x^3 + x^2 + x + 1)$ hual for the sum of a geometric series. As they work to solve a problem, mathematic								
Logic and Reasoning	Reasoning and problem solving	Reasoning and problem solving can be supported through the following standards:								
SMP ALL										
		 K.MD.A.2 Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter. KMD.B.3 								

Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.

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SUBJECT AREA CONNECTION	Math	DATE:	December 30, 2014	AUTHOR:	Charlene Tate Nichols	CONTRIBUTORS:	
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Domain:	Kindergarten Content Standard					
Social and Intellectual Habits						
	K.G.B.4					
	Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g.,					
	number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).					

CCSS.Math.Practice.MP1 Make sense of problems and persevere in solving them.

Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.

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CCSS.Math.Practice.MP3 Construct viable arguments and critique the reasoning of others.

Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. They justify their conclusions, communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until later grades. Later, students learn to determine domains to which an argument applies. Students at all grades can listen or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.

CCSS.Math.Practice.MP4 Model with mathematics.

Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.

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SUBJECT ARE	A CONNECTION:	Math	<mark>DATE:</mark>	December 30, 2014	<mark>AUTHOR:</mark>	Charlene Tate Nichols	CONTRIBUTORS:					
Domain:				Kii	ndergarten Con	tent Standard						
Social and Intellectu												
		oriate tools strategically.										
	athematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a											
	readsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound cisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically proficient high school students analyze graphs of											
			-				ledge. When making mathematical models, they know					
	-						illy proficient students at various grade levels are able to					
			• • •				use technological tools to explore and deepen their					
understanding of co				a website, and use them t	o pose or solve	problems. They are able to	use teenhological tools to explore and deepen their					
CCSS.Math.Practice	•	precision.										
	•		hers. They try t	o use clear definitions in o	discussion with	others and in their own rea	soning. They state the meaning of the symbols they					
							orrespondence with quantities in a problem. They					
calculate accurately	and efficiently, ex	xpress numerical answers with a d	degree of preci	sion appropriate for the p	roblem context	. In the elementary grades,	students give carefully formulated explanations to each					
•		hool they have learned to examin	e claims and m	ake explicit use of definiti	ons.							
CCSS.Math.Practice	e.MP7 Look for an	d make use of structure.										
					-		the same amount as seven and three more, or they may					
							ration for learning about the distributive property. In the					
							nd can use the strategy of drawing an auxiliary line for					
							single objects or as being composed of several objects.					
		as 5 minus a positive number tim		d use that to realize that i	ts value cannot	be more than 5 for any rea	I numbers x and y.					
		d express regularity in repeated	-	f								
				-			night notice when dividing 25 by 11 that they are					
		-					repeatedly check whether points are on the line through $x - 1$, $(x - 1)(x^2 + x + 1)$, and $(x - 1)(x^3 + x^2 + x + 1)$					
							oversight of the process, while attending to the details.					
		ableness of their intermediate res		in to solve a problem, ma			wersight of the process, while attending to the details.					
	Symbolic	Symbolic representation can be		ough the following stand	ards:							
•	, representation	, ,		0 0								
SMP	-											
1,2,4,5,7												
		K.OA.A.1										
		Represent addition and subtract	ion with object	s, fingers, mental images,	drawings, sour	nds (e.g., claps), acting out s	ituations, verbal explanations, expressions, or equations.					
		K.OA.A.2										
		Solve addition and subtraction w	vord problems,	and add and subtract wit	hin 10, e.g., by	using objects or drawings to	prepresent the problem.					

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SUBJECT AREA CONNECTION: Math DATE: December 30, 2014 AUTHOR: Charlene Tate Nichols CONTRIBUTORS:

Kindergarten Content Standard

Social and Intellectual Habits

Domain:

CCSS.Math.Practice.MP1 Make sense of problems and persevere in solving them.

Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.

CCSS.Math.Practice.MP2 Reason abstractly and quantitatively.

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CCSS.Math.Practice.MP4 Model with mathematics.

Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.

CCSS.Math.Practice.MP5 Use appropriate tools strategically.

Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically proficient high school students analyze graphs of functions and solutions generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. Mathematically proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems. They are able to use technological tools to explore and deepen their understanding of concepts.

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Social and Intellectual Habits

Domain:

Kindergarten Content Standard

CCSS.Math.Practice.MP7 Look for and make use of structure.

Mathematically proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see 7×8 equals the well remembered $7 \times 5 + 7 \times 3$, in preparation for learning about the distributive property. In the expression $x^2 + 9x + 14$, older students can see the 14 as 2×7 and the 9 as 2 + 7. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. They also can step back for an overview and shift perspective. They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, they can see $5 - 3(x - y)^2$ as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers *x* and *y*.

Pretend or	Pretend or symbolic play can be supported through the following standards:
symbolic play	

CCSS.Math.Practice.MP1 Make sense of problems and persevere in solving them.

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Social and Intellectual Habits

Domain:

Kindergarten Content Standard

CCSS.Math.Practice.MP5 Use appropriate tools strategically.

Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically proficient high school students analyze graphs of functions and solutions generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. Mathematically proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems. They are able to use technological tools to explore and deepen their understanding of concepts.

CCSS.Math.Practice.MP7 Look for and make use of structure.

Mathematically proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see 7×8 equals the well remembered $7 \times 5 + 7 \times 3$, in preparation for learning about the distributive property. In the expression $x^2 + 9x + 14$, older students can see the 14 as 2×7 and the 9 as 2 + 7. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. They also can step back for an overview and shift perspective. They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, they can see $5 - 3(x - y)^2$ as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers *x* and *y*.