INTRODUCTION

This Pennsylvania Learns iTunes U course is designed to be a collection of resources to support teaching and learning in the kindergarten classroom. The content of this course is organized around the Kindergarten Mathematics Pennsylvania Core Instructional Framework. We believe that Pennsylvania teachers know what is needed to support their instructional design and delivery as well as what engages students in their own learning. For those reasons, the materials and resources provided in this course were curated by teachers. This course is not a curriculum. It is a collection of assets aligned to Pennsylvania Core Standards to support teaching and learning.

Message	Assignment/ Call to Action	Resource/URL	Resource introduction listed under "i" in the assignment.	Notes
Welcome to the Kindergarten Mathematics Pennsylvania Learns iTunes U course. We are setting the stage for this course by providing you with background information about Pennsylvania Mathematics Core Standards and the instructional shifts that work hand-in hand with the standards.				
Pennsylvania Core Standards: The State Board approved the final Chapter 4 regulations on September 12, 2013. The Independent Regulatory Review Commission (IRRC) approved the final regulation on November 21, 2013. With publication of Chapter 4 in the Pennsylvania Bulletin, the new regulations took effect on March 1, 2014. As part of the new regulations, Pennsylvania's Core Standards offer a set of rigorous, high-quality academic expectations in Mathematics that all students should master by the end of each grade level. The PA Core Standards are robust and relevant to the real world and reflect the knowledge and skills our young people need to succeed in life after high school, in both post- secondary education and a globally competitive workforce	REVIEW the "Teacher Resources" and "Student Resources" section of the PA Core Implementation section of the SAS Portal.	http:// www.pdesas.org /Standard/ PACore		

SETTING THE STAGE

	STANDARDS					
Module Title	Message	Assignment / Call to Action	Content Directions	Resource / URL		
About the Standards for Mathematical Practice and Content	The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students. These practices rest on important "processes and proficiencies" with longstanding importance in mathematics education. The first of these are the NCTM process standards of problem solving, reasoning and proof, communication, representation, and connections. The second are the strands of mathematical proficiency specified in the National Research Council's report <i>Adding It Up</i> : This report explores how students in pre-K through 8th grade learn mathematics and highlights the importance of the inclusion of the following in teaching and learning: adaptive reasoning, strategic competence, conceptual understanding (comprehension of mathematical concepts, operations and relations), procedural fluency (skill in carrying out procedures flexibly, accurately, efficiently and appropriately), and productive disposition (habitual inclination to see mathematics as sensible, useful, and worthwhile, coupled with a belief in diligence and one's own efficacy)					
Standards for Mathematical Practice	The eight Standards of Mathematical Practice: 1 Make sense of problems and persevere in solving them. 2 Reason abstractly and quantitatively. 3 Construct viable arguments and critique the reasoning of others. 4 Model with mathematics. 5 Use appropriate tools strategically. 6 Attend to precision. 7 Look for and make use of structure. 8 Look for and express regularity in repeated reasoning. The Standards for Mathematical Practice describe ways in which developing student practitioners of the discipline of mathematics increasingly ought to engage with the subject matter as they grow in mathematical maturity and expertise throughout the elementary, middle and high school years.					
		LEARN how the standards improve teaching, make learning more engaging, create shared expectations, and cultivate lifelong learning for students.	NCTM and The Hunt Institute have produced a series of videos to enhance understanding of the mathematics that students need to succeed in college, life, and careers. Beginning in the primary grades, the videos address the importance of developing a solid foundation for algebra, as well as laying the groundwork for calculus and other postsecondary mathematics coursework. The series also covers the Standards for Mathematical Practice	https://itunes.apple.com/ us/itunes-u/hunt- institute-ccss-series/ id461816983?mt=10		

			elaborated in the PA Core Standards for Mathematics and examines why developing conceptual understanding requires a different approach to teaching and learning.	
Standards for Mathematical Content	The Standards for Mathematical Content are a balanced combination of procedure and understanding. Expectations that begin with the word "understand" are often especially good opportunities to connect the practices to the content. Students who lack understanding of a topic may rely on procedures too heavily. Without a flexible base from which to work, they may be less likely to consider analogous problems, represent problems coherently, justify conclusions, apply the mathematics to practical situations, use technology mindfully to work with the mathematics, explain the mathematics accurately to other students, step back for an overview, or deviate from a known procedure to find a shortcut. In short, a lack of understanding effectively prevents a student from engaging in the mathematical practices. The content standards which set an expectation of understanding are potential "points of intersection" between the Standards for Mathematical Content and the Standards for Mathematics curriculum that most merit the time, resources, innovative energies, and focus necessary to qualitatively improve the curriculum, instruction, assessment, professional development, and student achievement in mathematics.			
		DEEPEN your understanding of the PA Core Standards shifts in mathematics.	This course is intended to deepen your understanding of the PA Core Standards shifts in mathematics. It is designed to stimulate thinking around designing and delivering instruction matched to the Standards and how this may change your classroom practice. The content describes how the Standards differ from previous Standards and thoroughly explains the Shifts of focus, coherence and rigor.	https://itunes.apple.com/ us/course/ccss-for- teachers-math-shifts/ id679843407

Module Title	Message	Assignment / Call to Action	Content Directions	Resource / URL	Info about the URL (published on the "i" button of a resource/ url)
Module 1: Classify and Count Numbers to 10					
About Module 1	In Module 1, students investigate growth and shrinking patterns to 10 of "1 more" and "1 less," using models such as the number stairs. Like pre-kindergarten, kindergarten starts out realistically with solidifying the meaning of numbers to 10 with a focus on relationships to 5. In this module, students engage in activities to develop a foundational understanding of numbers and correspondence to counting. They will learn to count orally by ones beginning from a given number (instead of always beginning at 1).Write numbers from 0 to 10.Count to tell the number of objects.Say the number names in the standard order, pairing each object with one and only one number name.Understand that the last number said tells the number of objects counted.Understand that each successive number name refers to a quantity that is one larger.Compare amounts to 10.				
	 Focus Standards for Module 1 <u>CC.2.1.K.A.1</u> - Know number names and write and recite the count sequence <u>CC.2.1.K.A.2</u> - Apply one-to-one correspondence to count the number of objects. 				
	Important Standards for Module 1 <u>CC.2.1.K.A.3</u> - Apply the concept of magnitude to compare numbers and				
	<u>CC.2.1.K.A.2</u> - Apply one-to-one correspondence to count the number of objects.				
	 Standards for Mathematical Practice in Module 1 MP# 1: Make sense of problems and persevere in solving them. MP# 3: Construct viable arguments and critique the reasoning of others. MP# 5: Use appropriate tools strategically. MP# 6: Attend to precision. 				
	Click on the "i" button beside each resource/	ACCESS PA Standards Instructional Framework: Module 1		http://www.pdesas.org/ module/cm/Cmap/View/ 16641	
	url to find additional information and/or step by step instructions. Watch You Tube videos on ViewPure.com to eliminate ads.				
Numbers and Operations: Counting Orally by Ones	In this lesson, students count orally by ones beginning from a given number (instead of always beginning at 1).	TEACHING counting forward beginning with a given number.		http:// www.readtennessee.or g/math/teachers/ k-3_common_core_mat h_standards/ kindergarten/ counting_cardinality/ kcca2.aspx	Tennessee Early Grades Math Toolbox
		TEACHING how to count to 10 by ones.		<u>https://</u> www.youtube.com/ watch? v=glkQwKA5_PU	Busy Beavers Numbers - will show ads if you watch all songs continuously.
		TEACHING counting of objects starting with 1.	Read "123 Count the World with Me" and use interactive activities.	https:// itunes.apple.com/us/ book/123-counting- around-world/ id521336095?mt=11	
		I CAN count forward and backward within 10 beginning at any number.		http://www.ixl.com/ math/kindergarten/ count-forward-and- backward-up-to-10	Make math practice fun! 'Count forward and backward - up to 10' and thousands of other skills for K-12!
Numbers and Operations: Write Numbers from 0 to 10	In this lesson, students write numbers from 0 to 10.	TEACHING writing numbers 1-10.		<u>http://youtu.be/63-</u> mmHVfFn4	How to write numbers for children Write Numbers 1-10 Writing numbers for children This video teaches children how to write numbers in a step by step form.
		I CAN write numbers 1-10.	Practice writing numbers 1-5 with three different games per number.	https:// itunes.apple.com/us/ app/letterschool-free- learn-to/id481067676? mt=8	It's 4.99 to get all the digits and letters
Numbers and Operations: Count to Tell Number of Objects	In this lesson students count to tell the number of objects.	TEACHING how to create groups to match a given number.		<u>https://</u> www.engageny.org/ node/25151/file/81381	This lesson has students group objects into categories, then count to tell how many objects are in each category.
		TEACHING how to use items to count to 10.	Use "Numbers!" to review and reinforce counting to 10.	https:// itunes.apple.com/us/ book/numbers!/ id615855440?mt=11	
		I CAN count to tell the number of objects.	Match numeral to a corresponding group of objects.	https:// itunes.apple.com/us/ app/123-number- magic-line-matching/ id468534094?mt=8	
		I CAN count to tell the number of objects.	Choose Kindergarten, Numbers 1-5, Level 3	https:// itunes.apple.com/us/ app/preschool- kindergarten-splash/ id610303073?mt=8	A sample of the app is free with limited uses. The full app requires purchase.
Numbers and Operations: One to One Correspondence	In this lesson, students say number names in the standard order, pairing each object with one and only one number name.	TEACHING counting with one-to-one correspondence.	Activities for practicing counting with one-to-one correspondence.	http://www.pre- kpages.com/one-to- one/	
		I CAN count the numbers 1 to 10 and use the correct number of beads to represent it.	Give students a number of your choice from 1 - 10 and have them represent it using one number rack.	https:// itunes.apple.com/us/ app/number-rack-by- math-learning/ id496057949?mt=8	
Number	In this losson, students and	1 CAN count the numbers 1 to 10 and use the correct number of beads to represent it.	Give students a number of your choice from 1 - 10 and have them represent it using a ten frame.	nttps:// itunes.apple.com/us/ app/number-frames-by- math-learning/ id873198123?mt=8	
Operations: Telling the Number of Objects	understanding that the last number said tells the number of objects counted.	correct number of objects based on the numeral given and recognize that the last object I count is the number in the set.	the given numeral.	<u>games/pizza-place</u>	
		I CAN identify the number of objects pictured based on their arrangement.	Use the quick images app to quickly identify how many objects are pictured.	https:// itunes.apple.com/us/ app/quick-images/ id560877283?mt=8	
Numbers and Operations: Number Name Refers to A Quantity	In this lesson, students gain an understanding that each successive number name refers to a quantity that is one larger.	TEACHING successive order of numbers by building towers.	Use the colored stairs activity to build towers in order.	https:// kindergartenbusybees. wordpress.com/ 2012/11/19/math-work- stations/	
		TEACHING the successive order of numbers by adding one more to your number card.	Use the number frame app to represent the number on a ten frame.	http:// www.k-5mathteachingr esources.com/support- files/show-one- more.pdf	
		more than a number on a ten frame.		itunes.apple.com/us/ app/number-frames-by- math-learning/ id873198123?mt=8	
Numbers and Operations: Compare Amounts to 10	In this lesson, students compare amounts to 10.	TEACHING how to line objects up to compare the amount.	This video demonstrates lining two groups of objects up to compare the amount.	https:// www.youtube.com/ watch? v=DWTEvb94mPo	
		objects and compare using the words more and fewer.	then explains which group has more or fewer.	<u>mups://</u> www.youtube.com/ watch?v=Wx1fbYAiXC8	
		TEACHING how to compare amounts to ten.	Use the app in the next post for the counters.	http:// www.k-5mathteachingr esources.com/support- files/who-has-more.pdf	
		I CAN compare amounts using number cubes.	Use these number cubes to play the game from the previous post.	https:// itunes.apple.com/us/ app/connecting-cubes/ id905985622?mt=8	
		I CAN count groups of objects and compare the groups.	Count a group of objects, then choose another group that has more, fewer, or equal.	http://www.ixl.com/ math/kindergarten/ fewer-equal-and-more	

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Module 2: Identify and					
About Module 2	In Module 2, students learn to identify and describe squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders and spheres. Students will use positional words to describe position of shapes. Module 2 activities engage students in developing an understanding of two and three-dimensional shapes. Kindergartners can often find shapes in their world but cannot identify them correctly by name. During this Module, students will learn to: 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, behind, and next to. Name shapes regardless of their orientations or overall size.Identify shapes as two- dimensional or three-dimensional.				
	Focus Standards in Module 2				
	three-dimensional shapes. Standards for Mathematical Practice in				
	 MOdule 2 MP# 1: Make sense of problems and persevere in solving them. MP# 2: Reason abstractly and quantitatively. MP# 3: Construct viable arguments and critique the rezoning of others. MP# 5: Use appropriate tools strategically. 				
		ACCESS PA Standards Instructional Framework: Module 2		http://www.pdesas.org/ module/cm/Cmap/View/ 16642	
	Click on the "i" button beside each resource/url to find additional information and/or step by step instructions. Watch You Tube videos on ViewPure.com to eliminate ads.				
Two and Three Dimensional Shapes	In this lesson, students 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, behind, and next to.	TEACHING to identify two-dimensional shapes.	This Part 1 of a two part lesson plan.	https:// www.illustrativemathemat ics.org/content- standards/K/G/A/tasks/ 675	
		TEACHING to name shapes accurately regardless of their orientation or size.	This is Part 2 of a two part lesson plan.	https:// www.illustrativemathemat ics.org/content- standards/K/G/A/tasks/ 822	
		TEACHING shape identification and and the language to describe their position.	"Shape the World with Me!" story reinforces positions of shapes to other objects and surroundings.	https://itunes.apple.com/ us/book/shape-the-world- with-me!/id509357206? mt=11	
		I CAN identify and name two dimensional shapes.	Online activity to identify two-dimensional shapes	https:// www.khanacademy.org/ math/early-math/cc-early- math-geometry-topic/cc- early-math-recognizing- shapes/e/naming-shapes	
		I CAN recognize shapes based on name.	This game directs students to locate shapes based on name.	http://mrnussbaum.com/ shapes-ipad.html	
		I CAN recognize shapes based on name.	The "Shape Monster" App is a demanding chef who is very specific about the shapes of his ingredients.	https://itunes.apple.com/ us/app/shape-monster- learn-different/ id614505460?mt=8	
		I CAN identify and name two-dimensional shapes.	When you open the app, choose What are Tiggly shapes.	https://itunes.apple.com/ us/app/tiggly-safari/ id716679050?mt=8	"Tiggly Safari" has students identify shapes within a picture and use two- dimensional shapes to create their own characters and stories.
		TEACHING three- dimensional shapes.	A song that provides students the opportunity to recognize three- dimensional shapes.	http://youtu.be/ nnJVF2aeic8	
		TEACHING shape identification and the language to describe their position in photographs.	Pause the video and have students describe where the shapes are using positional words.	https://www.youtube.com/ watch?v=ML-vdHCeZjI	
		I EACHING position words to describe objects in their environment.	video details the relationship of a cartoon dog and cat to each other and other objects.	https://jtunes.apple.com/	
		to describe objects in their environment.	relative position vocabulary.	us/app/pocket-charts!- position-words/ id439815633?mt=8	
Two and Three Dimensional Shapes: Naming	In this lesson, students name shapes regardless of orientation or overall size.	TEACHING the name of shapes regardless of orientation or overall size.	Refer to page 18	http:// www.ncpublicschools.org /docs/acre/standards/ common-core-tools/ unpacking/math/ kindergarten.pdf	
		I CAN identify and name two dimensional shapes regardless of their orientation or size.	Online activity to identify two-dimensional shapes.	https:// www.khanacademy.org/ math/early-math/cc-early- math-geometry-topic/cc- early-math-shapes/e/ attributes-of-shapes	
Two and Three Dimensional Shapes: Identifying Shapes	In this lesson, students identify shapes as two- dimensional or three-dimensional.	TEACHING the difference between two-dimensional and three-dimensional shapes.	This video introduces the differences between 2D and 3D shapes.	https://www.youtube.com/ watch?v=2ubjcLczqSo	
		I CAN sort two and three- dimensional shapes.	Students will use the iPad camera to take photos of shapes throughout the classroom. Students then will sort the photos using "Pic Collage" App to create a 2D collage and a 3D collage.	https://itunes.apple.com/ us/app/pic-collage-photo- gif-video/id448639966? mt=8	

Module Title	Message	Assignment / Call to Action	Content directions	Resource / URL	Info about the URL (published on the "i" button of a resource/ url)
Module 3: Comparison with Length, Weight, and Numbers to					
About Module 3	In Module 3, students begin to experiment with measurement, particularly with units and comparison of units. Students use different units to measure length, weight and capacity, and explore the measurable attributes of an object. Comparison begins with developing the meaning of the word "than" in the context of "taller than," "shorter than," "heavier than," "longer than," etc. The terms "more" and "less" are abstract later in kindergarten because of their context: "7 is 2 more than 5" is more abstract than "Jim is taller than John." "1 more, 2 more, 3 more" lead into the addition fact fluencies (+1, +2, +3). Comparing numbers leads to a study of the numbers that make up a number (e.g., "3 is less than 7" and later, "3 and 4 make 7."). This, in turn, leads naturally to discussions of adding, subtracting, and solving word problems in the next module.				
	 <u>CC.2.4.K.A.1</u> - Describe and compare attributes of length, area, weight, and capacity of everyday objects. <u>CC.2.4.K.A.4</u> - Classify objects and count the number of objects in each category. 				
	Important Standards in Module 3 <u>CC.2.1.K.A.3</u> - Apply the concept of magnitude to compare numbers and quantities.				
	 Standards for Mathematical Practice in Module 3 MP# 1: Make sense of problems and persevere in solving them. MP# 5: Use appropriate tools strategically. MP# 6: Attend to precision. 				
		ACCESS PA Standards Instructional Framework: Module 3		http://www.pdesas.org/ module/cm/Cmap/View/ 16643	
	Click on the "i" button beside each resource/ url to find additional information and/or step by step instructions. Watch You Tube videos on ViewPure.com to eliminate ads.				
Measurement, Data, and Probability: Measurable Attributes	In this lesson, students describe measurable attributes of objects, such as length, weight, area, or capacity.	TEACHING measurement in kindergarten.	"K-5 Math Teaching Resources" is a website that contains links to activities, task cards, read alouds, and manipulatives useful in teaching measurement.	http:// www.k-5mathteachingres ources.com/kindergarten- measurement-and- data.html	
		TEACHING description of objects based on length.	Kermit the Frog reports as Pinocchio's nose gets longer.	<u>http://youtu.be/</u> dy49Yea3iZc	
		TEACHING comparison of two objects with measureable attributes.	This video features Elmo and Telly describing the difference between heavy and light.	http://youtu.be/ imz_xwPgCM4	
		TEACHING describing and comparing measureable data.	Plan by "Illustrative Mathematics" that goes through teaching steps and then presents an activity for students to complete.	https:// www.illustrativemathemati cs.org/illustrations/1012	
		I CAN describe a measurable attribute of my objects.	Take a photo of your objects and import it into the Show Me App. Describe your objects' measurable attributes. Share your video with another partner pair to get feedback.	https://itunes.apple.com/ us/app/showme- interactive-whiteboard/ id445066279?mt=8	
Measurement, Data, and Probability: Comparing Two Objects	In this lesson, students compare two objects with measureable attributes in common and describe the difference.	TEACHING comparison of objects with measureable attributes.		http:// www.k-5mathteachingres ources.com/support-files/ measurement-sentence- frames-length.pdf	
				http:// www.k-5mathteachingres ources.com/support-files/ what-is-heavy.pdf	
				www.k-5mathteachingres ources.com/support-files/ what-is-long.pdf	
		TEACHING comparison of objects with measureable attributes.	Use the connecting cubes apps to engage students in the following two activities.	http:// www.k-5mathteachingres ources.com/support-files/ comparing-towers-ver. 1.pdf	
				http:// www.k-5mathteachingres ources.com/support-files/ is-it-longer.pdf https://itunes.apple.com/ us/app/connecting-cubes/ id905985622?mt=8	
		TEACHING comparison of two objects based on weight and length.	This video compares several objects using length and weight.	http://youtu.be/ eKxob6ZPyJQ	
		I CAN describe measurable attributes of objects.	Choose Long and Short or Scale Tale	https://itunes.apple.com/ us/app/measurement-hd/ id452493138?mt=8	With this measurement app, kindergarteners get introduced to basic concepts of measurement such as weight, volume and length. (\$1.99)
		I CAN compare objects based on measurable attributes.		http:// www.khanacademy.org/ math/early-math/cc-early- math-measure-data-topic/ cc-early-math- measurement/e/which- has-more-	Interactive resource for students to reinforce comparing objects with nonstandard units of measurement.
		I CAN compare two objects to determine which has greater or lesser volume.		http://www.ixl.com/math/ kindergarten/holds-more- or-less	Student choose between two objects to compare volume. They can click on the speaker icon to have the questions read to them.

Module Title	Message	Assignment / Call to Action	Content Directions	Resource / URL	Info about the URL (published on the "i" button of a resource/url)
Module 4: Number Pairs, Addition and Subtraction of					
Numbers to 10 About Module 4	In Module 4, students use objects, fingers, mental images, drawings, acting out				
	situations, verbal explanations, expressions, or equations to represent addition and subtraction situations. They will understand addition as putting together and adding to and subtraction as taking apart and taking from.				
	Focus Standards in Module 4 <u>CC.2.2.K.A.1</u> - Extend concepts of putting together and taking apart to add and				
	subtract within 10. Standards for Mathematical Practice in Module 4				
	 MP# 1: Make sense of problems and persevere in solving them. MP# 2: Reason abstractly and 				
	 quantitatively. MP# 3: Construct viable arguments and critique the rezoning of others. MP# 5: Use appropriate tools strategically. 				
		ACCESS PA Standards Instructional Framework: Module 4		http://www.pdesas.org/ module/cm/Cmap/View/ 16752	
	Click on the "i" button beside each resource/ url to find additional information and/or step by step instructions. Watch You Tube videos on ViewPure.com to eliminate ads.				
Addition and Subtraction	In this lesson, students represent addition and subtraction with objects, fingers, mental images, and drawings, sounds, acting out situations, verbal explanations, expressions, or equations.	TEACHING addition and the related vocabulary through a video.	This video has a catchy pirate song and shows using objects to solve addition problems. It defines terms related to addition.	https:// www.youtube.com/ watch? v=WT_wvvEvkw4	
		TEACHING addition by using manipulatives.	Complete lesson by NCTM providesteaching steps and then presents an activity for students to complete.	http:// illuminations.nctm.org/ Lesson.aspx?id=290	
		TEACHING subtraction within 10 using literature and number cubes.		http:// illuminations.nctm.org/ Lesson.aspx?id=310	
		I CAN model the literature situation with number cubes.	Model a subtraction story with number cubes.	https:// itunes.apple.com/us/ app/connecting-cubes/ id905985622?mt=8	
		I CAN demonstrate adding and subtracting through creating a video with my friends as actors.	Use your iPad to make a video of you directing your friends to act out an addition or subtraction problem you have created.	https:// itunes.apple.com/us/ app/story-creator-easy- story-book/ id545369477?mt=8	
		I CAN use number racks to represent addition and subtraction problems then write the matching equation.	This could be used in two ways: teacher could give problems for students to model or students could create their own problems to model and take screenshots of each one to be checked by the teacher	https:// itunes.apple.com/us/ app/number-rack-by- math-learning/ id496057949?mt=8	
		I CAN build an equation by looking at the given pictures.	Has different levels of addition/subtraction facts from using pictures to solve problems to building equations to match a picture. Choose 'Free Choice' to select a specific skill rather than going on an entire mission	https:// itunes.apple.com/us/ app/todo-math- kindergarten-to/ id666465255?mt=8	
Solving Word Problems	In this lesson, students use objects, fingers, and drawings to solve addition and subtraction word problems.	TEACHING addtion and subtraction within 10 by adding one more firefly to your ten frame.	Show the video while having students pull yellow chips into the ten frame using the ten frame app in the next post.	https:// www.illustrativemathem atics.org/content- standards/K/OA/A/2/ tasks/1151	
		I CAN represent addition and subtraction of fireflies on a ten frame.	Put ten yellow chips on the mat and pull one at a time into a ten frame as each firefly is trapped in the jar.	https:// itunes.apple.com/us/ app/number-frames-by- math-learning/ id873198123?mt=8	
		I CAN add and subtract up to 10 to solve word problems.	Choose up to 10	https:// itunes.apple.com/us/ app/math-word- problems-addition/ id703753981?mt=8	This app will speak to the children if they are unable to read.
		I CAN count pictures to solve addition problems.	Use pictures to solve addition problems.	http://www.ixl.com/math/ kindergarten/addition- with-pictures-sums-up- to-10	
		I CAN use pictures to solve subtraction problems.	Use pictures to solve subtraction problems.	http://www.ixl.com/math/ kindergarten/ subtraction-sentences- numbers-up-to-10	
Decompose Numbers In More than One Way	In this lesson, students decompose numbers less than or equal to 10 into pairs in more than one way, by using objects or drawings, and record each decomposition by a drawing or equation.	TEACHING how to decompose the same number into different parts.	Lesson on decomposing numbers, including ideas for follow up activities for the students to complete.	http:// lessonplanspage.com/ mathadditiondecomposi ngnumbersactivitiesk1- htm/	
		TEACHING how to decompose 5 into different parts.		https:// www.illustrativemathem atics.org/content- standards/K/OA/A/3/ tasks/1408	
		I CAN represent combinations of 5 using number chips.	Use the number chips to represent each combination of red and blue chips from the previous post activity. Write an equation to match each representation.	https:// itunes.apple.com/us/ app/number-frames-by- math-learning/ id873198123?mt=8	
		I CAN create a number book to represent combinations of 5.	Use each screenshot from the previous post to create a book about 5.	https:// itunes.apple.com/us/ app/story-creator-easy- story-book/ id545369477?mt=8	
		I CAN use a ten frame to decompose a number into different combinations.	Assign a number to the students. Have them decompose it using two different colored chips on a ten frame, write a corresponding equation, and take a screenshot.	https:// itunes.apple.com/us/ app/number-frames-by- math-learning/ id873198123?mt=8	
Making the Number 10	In this lesson, students find the number that makes 10, for any number from1 to 9, when added to the given number, by using objects or drawings, and record the answer with a drawing or equation.	I CAN find numbers that make a ten.		https:// itunes.apple.com/us/ app/10-frame-fill/ id418083871?mt=8	
		I CAN identify the number that goes with a given number to make a ten.	Fill the missing numbers in the equation - mental only.	http://www.ixl.com/math/ kindergarten/addition- sentences-sums-equal- to-10	

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Module 5: Numbers 10-20, Counting to 100 by 1 and 10					
About Module 5	In Module 5, students explore numbers 10-20, which are parsed as "10 together with a number from 1-10." For example, "12 is 2 more than 10." In numbers 6-10, the role of 5 loses significance as those numbers are shown in different configurations other than "5 and a number." In contrast, the number 10 is special; it is the anchor that will eventually become the "ten" unit in the place value				
	 system. Focus Standards in Module 5 <u>CC.2.1.K.A.1</u> - Know number names and write and recite the count sequence. <u>CC.2.1.K.B.1</u> - Use place value to compose and decompose numbers within 10 				
	19. Important Standards in Module 5				
	 <u>CC.2.1.K.A.1</u> - Know number names and write and recite the count sequence. <u>CC.2.1.K.A.2</u> - Apply one-to-one correspondence to count the number of objects. <u>CC.2.1.K.A.3</u> - Apply the concept of magnitude to compare numbers and quantities. Standards for Mathematical Practice in 				
	 Module 5 MP# 1: Make sense of problems and persevere in aching them 				
	 MP# 2: Reason abstractly and quantitatively. MP# 4: Model with mathematics. MP# 7: Look for and make use of structure. MP# 8: Look for and express regularity in repeated reasoning. 				
		ACCESS PA Standard Instructional Framework: Module 5		http:// www.pdesas.org/ module/cm/Cmap/ View/16759	
	Click on the "i" button beside each resource/ url to find additional information and/or step by step instructions. Watch You Tube videos on ViewPure.com to eliminate ads.				
Numbers and Operations: Numerical Sequence and Place Value	In this lesson, students count forward beginning from a given number within the known sequence (instead of having to begin at 1).	TEACHING counting in any sequence without beginning at number 1.	"Missing Numbers Video" explores how to use numbers before and after a given numeral to determine the remaining sequence.	http://youtu.be/ WEzBUH0AK5Q	
		TEACHING counting within the known sequence without beginning at the number 1		https:// www.illustrativemathe matics.org/content- standards/K/CC/A/2/ tasks/373	
		I CAN count by adding on to a given number that is not the number 1.	Choose Kindergarten - Numbers Beyond 10.	https:// itunes.apple.com/us/ app/splash-math-k- to-5-app-for/ id6726588282mt=8	
Numbers and Operations: Naming Numerals 0-20	In this lesson, students name numerals 0 – 20.	TEACHING how to recognize the numerals 11-20.		https:// www.illustrativemathe matics.org/content- standards/K/CC/A/ tasks/454	
		I CAN name and match numbers from 0 to 20.	"Pocket Chart! Number and Number Words" App provides and interractive "matching game" where students must match similar numbers.	https:// itunes.apple.com/us/ app/pocket-charts!- numbers-number/ id439816682?mt=8	
		I CAN name and count numbers from 0 to 20.	"1-20 Counting" App has students use sequence to identify, name, and count numbers from 1-20. (99 cents)	https:// itunes.apple.com/us/ app/1-20-balloons/ id402175664?mt=8	
Numbers and Operations: Represent Objects Using 0-20	In thisl lesson, students represent a number of objects with a written numeral 0-20.	TEACHING recognition of number and written numerals.	Read "Buster's Undersea Counting Expedition" to reinforce correspondence of number names to appropriate object counts up to 20. (\$1.99)	https:// itunes.apple.com/us/ book/busters- undersea-counting/ id431347010?mt=11	
		TEACHING counting the number of objects and writing the matching numeral.		https:// www.illustrativemathe matics.org/content- standards/K/CC/A/3/ tasks/1397	
		I CAN write the numeral to match the number of objects.	Choose the Count option.	https:// itunes.apple.com/us/ app/count-sort-and- match/id577113466? mt=8	
Numbers and Operations: Compose and Decompose Numbers to 19	In this lesson, students compose and decompose numbers up to 19 into ten and ones by using objects or drawings and record each composition or decomposition with a drawing or equation.	TEACHING how to compose and decompose numbers 11 to 19.		https:// www.youtube.com/ watch? v=0zJTAfb1yFk&index =17&list=PLBKqAzM4 hQF5Ghk04s8nCB4b dq5QbNua2	
		TEACHING how to create a number from 11-19 using a group of ten and adding additional one units.	"Teens Have a Group of 10" song teaches that each number from 11-19 has one group of ten and additional units to then create a teen number. Accompany this lesson with the pdfs for interactive student manipulatives.	http://youtu.be/ uedvwH6Ay18	
		TEACHING how to compose and decompose the teen numbers.		https:// www.illustrativemathe matics.org/content- standards/K/NBT/A/1/ tasks/1404	
		I CAN use a double ten frame and an equation to represent each number from 11 to 19.	Use a double ten frame to create each number from 11 to 19. Write the correct equation to represent each double ten frame and take a screenshot of each number.	https:// itunes.apple.com/us/ app/number-frames- by-math-learning/ id873198123?mt=8	
Numbers and Operations:Counting to 100	In this lesson, students count to 100 by ones and by tens.	TEACHING counting within 100 by ones.		https:// www.illustrativemathe matics.org/content- standards/K/CC/A/1/ tasks/359	
		TEACHING counting within 100 by tens.		https:// www.illustrativemathe matics.org/content- standards/K/CC/A/1/ tasks/754	

Module Title	Message	Assignment / Call to Action	Content note	Resource / URL	Info about the URL (published on the "i" button of a resource/url)
Module 6: Analyze, Compare, Create, and Compose Shapes					
About Module 6	In Module 6, students discover that shapes can be composed of smaller shapes. They begin to describe similarities and differences among shapes.				
	Focus Standards for Module 6 <u>CC.2.3.K.A.2</u> - Analyze, compare, create, and compose two- and three- dimensional shapes.				
	Important Standards for Module 6				
	two- and three-dimensional shapes. Standards for Mathematical Practice				
	in Module 6MP# 1. Make sense of problems and				
	 P# 3. Construct viable arguments and critique the reasoning of others. MP# 4. Model with mathematics. MP# 7. Look for and make use of structure. 				
		ACCESS the PA Standards Instructional		http://www.pdesas.org/ module/cm/Cmap/View/	
	Click on the "i" button beside each resource/url to find additional information and/or step by step instructions. Watch You Tube videos on ViewPure.com to eliminate ads.	Framework. Wodule o		10700	
Geometry: Two	In this lesson, students use simple	TEACHING using simple	Refer to pages 19.	http://	
and Three Dimensional Shapes	shapes to compose larger shapes.	shapes to compose larger shapes.		www.ncpublicschools.or g/docs/acre/standards/ common-core-tools/ unpacking/math/ kindergarten.pdf	
		TEACHING combining shapes to make other shapes.	Sesame Street's Two- Headed monster uses two triangles to make a rectangle in the video.	http://youtu.be/tHU5n- XuhJY	
		TEACHING how simple two-dimensional shapes are combined to make larger shapes.	I his activity in Illuminations Math allows children to use shapes to create larger shapes. Online activity where	<u>nttp://</u> <u>illuminations.nctm.org/</u> <u>Activity.aspx?id=3577</u> https://	
		larger shapes and a larger picture.	students use shapes to create a new shape.	www.khanacademy.org/ math/early-math/cc- early-math-geometry- topic/cc-early-math- composing-shapes/e/ compose-shapes	
		TEACHING how to make a square using tangram shapes.	"Tangrams-How to Make a Square" video demonstartes how to make a square from other shapes.	http://youtu.be/ 4b9F26Fr7_g	
		I CAN combine shapes to create larger shapes and depict real-world objects.	Part 1 - Students use "Pattern Shapes" App to explore geometry creating their own designs or filling in outlines. Part 2 - Students will take a screen shot of their new shape.	https:// itunes.apple.com/us/ app/pattern-shapes-by- math-learning/ id908511013?mt=8	
		I CAN decribe how I combine simple shapes into a larger one.	Students will load their screen shot from the previous lesson into the Show Me App. They will then describe how they used smaller shapes to create a larger one.	https:// itunes.apple.com/us/ app/showme- interactive-whiteboard/ id445066279?mt=8	
Geometry: Comparing Two and Three Dimensional Shapes	In this lesson, students analyze and compare two and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, difference, parts and other attributes.	TEACHING comparison of shapes.	"Compare Two and Three- Dimensional Shapes" video can be used to introduce how shapes are similar and different.	<u>https://</u> <u>www.youtube.com/</u> <u>watch?v=Yq1D39HidvU</u>	
		I CAN compare two and three-dimensional figures by shape name and its parts.	Choose Game mode, Find a shape.	https:// itunes.apple.com/us/ app/shiny-party- shapes-colors/ id6186583502mt=8	"Shiny Party Shapes" App provides students the opportunity to sort shapes (\$1.99)
		I CAN identify shapes as being the same and/or different based on features.	Online activity for students to practice comparing shapes based on their attributes.	https:// www.khanacademy.org/ math/early-math/cc- early-math-geometry- topic/cc-early-math- recognizing-shapes/e/ compare-shapes	
		I CAN use comparison to sort shapes.	Use the web activity to set rules for shape sorting.	http://www.shodor.org/ interactivate/activities/	
		I CAN name and identify two-dimensional shapes.	Choose the giraffe to determine shapes based on their attributes.	<u>https://</u> <u>itunes.apple.com/us/</u> <u>app/leo-and-pals-2d-</u> <u>shapes/id585604045?</u>	(1.99)
Geometry: Building Shapes	In this lesson, students model shapes in the world by building shapes from components and drawing shapes.	TEACHING how to build shapes from playdough.		<u>http://</u> <u>www.k-5mathteachingr</u> <u>esources.com/support-</u> files/playdo-shapes.pdf	
		TEACHING to build three- dimensional shapes.	Activity to build three- dimensional shapes.	http:// kinderkraze.blogspot.co m/2012/04/3d-shapes- are-fat-not-flat.html	
		I CAN create shapes and use them to make new shapes.	Build shapes from the rubber bands.	https:// itunes.apple.com/us/ app/geoboard-by-math- learning/id519896952? mt=8	"Geoboard by Math Learning" App has an interactive geoboard for building and creating shapes. This app is best used in a small group.
		I CAN desribe my shape and its attributes.	Take a screenshot of your shape, import it into the Show Me app and describe its attributes.	https:// itunes.apple.com/us/ app/showme- interactive-whiteboard/ id445066279?mt=8	
		TEACHING using shapes to build and create new shapes.	The "Learn Shapes" video shows how to draw shapes and real world objects using shapes.	http://youtu.be/ B8ENor1NUlo	
		I CAN create shapes through the use of touch and drawing.	"Shapes Touch and Write" App allows students to interract with shapes by tracing, outlining, and drawing.(\$2.99)	https:// itunes.apple.com/us/ app/shapes-touch-and- write/id567317819? mt=8	