Curriculum Sample Template
Max. 8 Pages

Grade Level	1	**Content Area**	Math
Course Title (grades 9-12 Only)	N/A		
Expected Prior Knowledge *The knowledge/skills mastered earlier in the year foundational to the mastery of the required Standard in the current sample.*	Students will have already mastered all first grade number sense units. They will be proficient in subitizing and decomposing numbers. By this point in the year, students will be highly proficient in their addition skills and strategies, which will aid them in quickly calculating their measurements.		
Alignment to Program of Instruction *Briefly outline methods of instruction found in this sequence of lessons that align to the Program of Instruction described in A.3.*	These math lessons will serve as the "Math Content Lesson" as described in the Program of Instruction. A large focus for math content lessons is developing conceptual understanding, which is accomplished in these lessons through the variety of hands-on activities to help students develop a deep understanding of estimation and measurement. Additionally, the discussions and exploration throughout each lesson enable students to think critically about the new content they are learning. These lessons follow the direct instruction model, including setting a purpose for learning, introduction to new material, guided practice, independent practice, and closure. These lessons also include authentic approaches as they utilize materials that students interact with on a daily basis and set an authentic purpose for learning each day.		
Standard Number and Description *List the Number* and the full description for the Required Standard or Science Performance Objective listed in section A.6.*	Grade: 1 Domain: Measurement & Data (MD) Cluster: Measure lengths indirectly and by iterating length units Standard: #2 - Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps. 1.MD.2 Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.		
Materials/Resources Needed	a variety of non-standard measuring units (paperclips, popsicle sticks, etc.), a variety of classroom objects to measure (desks, chairs, whiteboards, folders, etc.), pre-created "Estimate and Measure" worksheets, same-sized units made of two colors of paper (some blue, some green), tag board to glue the paper on, glue, half sheets and worksheets including standardized test questions		

* ***Standard Number****: For English Language Arts (Reading and Writing), use Grade, Strand, Standard (e.g., 3.RI.2). For K-8 Math, use Grade, Domain, Standard (e.g., 6.EE.7). For HS Math, use Conceptual Category-Domain, Standard (e.g., A-REI.6). For Science, use Grade, Strand, Concept, PO (e.g., 4.1.3.1).*

Lesson (add as needed)	Instructional Strategies	Student Activities
1	**Objective:** Students will estimate and measure the length of objects using non-standard units. **Introduction to New Material (10 minutes):** Before the lesson, teacher places some sort of non-standard measuring unit (paperclips, popsicle sticks, etc.) in the middle of each table team. Each team will have a different unit. Teacher poses a challenge problem to the class: How many **units** (*something we measure with*) do you think it will take to measure the length of your table? Make an **estimate** (*a smart guess with a reason why*) about how long your table is. Teacher leads students to think-pair-share their estimate. Each partner team will share how long they estimate their table will be. Teacher provides students with exploratory work time to check their estimate by actually measuring. Teacher circulates and take notes on students who properly measure and students who are struggling to measure correctly. Teacher thoughtfully selects two or three partnerships to share how they measured their table and whether their estimate was correct. Teacher guides these groups in presenting their successful measuring techniques (i.e., students who measured by laying multiple popsicle sticks end to end until the length was covered *and/or* students who used one paperclip to measure by using their finger as a landmark). **Guided Practice (15 minutes):** Teacher selects a student volunteer to help him/her model how to complete the cooperative learning/guided practice activity, Sage and Scribe. Teacher explains the guidelines & roles first: The sage is the "expert" and tells the scribe how to complete the whole math problem. However, the sage can ONLY use their words – they may not touch manipulatives or a pencil at all! Scribe follows the sage's directions, only using the tools when/how they are told to. If they disagree, have a conversation to figure it out. Teacher will model being the sage and telling the student how to read the measurement sheet, estimate how many units long an object will be, measure the object with a given unit, and record the results. Then teacher and student will switch roles and model one more measurement problem. Teacher will make sure to emphasize the student-created methods	Students will actively listen using predetermined listening norms (nodding, flea claps, etc.). Students will think-pair-share their estimates. Students will use their units to measure their tables and prepare to report to the class. Students will actively listen using predetermined listening norms (nodding, flea claps, etc.). Two or three students will present their methods of solving to the class, responding to teacher prompts as necessary. Students will actively listen using predetermined listening norms (nodding, flea claps, etc.). One student volunteer will assist the teacher in modeling Sage and Scribe.

	from the beginning of the lesson (using multiple copies laid back-to-back or iterating a single unit by using a finger as a landmark). Teacher directs students to work with their partner, walking around the room estimating & measuring items with non-standard units (using the Sage and Scribe structure) and recording results on a premade recording sheet. Teacher will write notes on students who are clearly mastering and students who will likely need further/more direct guided practice. When most of the class has completed Sage and Scribe, teacher directs them to return to their seats. Teacher will instruct students to independently measure the length of their personal whiteboard with a paperclip. Teacher will create a remediation group using this data *and* data from Sage and Scribe. **Independent Practice (15 minutes):** Teacher instructs students to complete an independent "Estimate and Measure" sheet with different objects to measure from around the room. Teacher will hand out different versions of the sheet to ensure that students won't crowd to measure one item. Teacher pulls a small group to remediate in further guided practice, and releases these students when they show mastery. **Closure (5 minutes):** Teacher prompts students to complete a think-pair-share about what jobs in the real world require us to measure. Teacher selects a few students to share their ideas.	Students estimate and measure items around the room using the cooperative learning structure Sage and Scribe (one student guides the other in how to complete a problem, then they switch). Students will measure their personal whiteboard with a paper clip, then write their measurement on their whiteboard. Students work independently to estimate and measure items around the classroom, recording their work on a recording sheet. A small group of students works with the teacher in further guided practice. Once students demonstrate mastery, they complete the independent practice. Students engage in a think-pair-share, sharing their ideas and listening to their partner. Students listen actively while other students share their ideas with the whole class.
2	**Objective:** Students will construct non-standard rulers in order to understand that the units must be laid back-to-back with no gaps or overlaps. **Introduction to New Material (15 minutes):** Teacher invests students by telling them that they are so smart, he/she thinks they can make their *own* rulers! However, there are certain things that make some rulers more effective than others. Teacher sets a goal by telling students that they will figure out what makes a great ruler today. Teacher presents the different materials for making the ruler: same-sized units made of two colors of paper (some blue, some green), tag	Students will actively listen using predetermined listening norms (nodding, flea claps, etc.). Students listen actively. Students arrange their materials in the "best" way to make a ruler. Students will justify why their arrangement is the

	board to glue the paper on, and glue. Teacher tells students he/she will first give them the units and the tag board, but not the glue. Teacher poses the following challenge: What's the best way to make a ruler using these materials? When we figure out the best way, we will get the glue to make them! Teacher provides students with work time to figure out how they'll arrange the units on the tag board. Teacher circulates to provide assistance and ask probing questions to get students on the right track.	best.
	Guided Practice (10 minutes): Teacher regains students' attention. Teacher purposefully selects students to share their methods for designing their rulers, both examples and non-examples. Teacher will guide students to the conclusion that the units must be laid back-to-back, horizontally, and in alternating colors (blue, green, blue, green, etc., to make it easier to see where units start/end). Teacher directs students to again use their materials to show how they plan on building their rulers. When students are ready, they will put their thumbs on their chins and teacher will check to see which students are ready to finalize their rulers.	Students will actively listen using predetermined listening norms (nodding, flea claps, etc.). Two or three students will present their methods of solving to the class, responding to teacher prompts as necessary. Students rearrange (or keep) their rulers in the best way to make a ruler. Students put their thumbs on their chins to show the teacher they are ready.
	Independent Practice (15 minutes): Teacher will give glue to students who are ready to finish constructing their rulers, as evidenced by their preliminary plan. Teacher will make a small group of students who struggled to make a reasonable plan for their ruler (or, if everyone was able to do it properly, he/she will pull an acceleration group). After the teacher finishes working with his/her small group, he/she circulates as students finish constructing their rulers at their desks, asking questions and assisting students as necessary.	Students complete the construction of their rulers, using their units, tag board, and glue. A small group of students meets with the teacher.
	Closure (5 minutes): Teacher prompts students to complete a think-pair-share about why their rulers will make measuring easier than it was yesterday. Teacher will conduct a second think-pair-share asking students to come up with a name for the units on their ruler. Teacher will lead a class discussion/vote to decide what to call their unit.	Students engage in a think-pair-share about why rulers help them to measure more easily and a second think-pair-share to come up with a name for the units on their rulers.
3	**Objective:** Students will estimate and measure objects using their self-created, non-standard rulers.	

	Introduction to New Material (10 minutes):	
	Teacher challenges students to estimate and measure the height of their partner using their new rulers. How many rulers long will they be (using the WHOLE ruler)? How many units long will they be (using only the smaller units on the ruler)? Teacher will circulate to take notes on student methods.	Students actively listen to the teacher. Then students will take turns measuring each other using their new self-made rulers.
	Teacher thoughtfully selects two or three partnerships to share how they estimated and measured their partners. Teacher will guide student experts to explain how they used helpful strategies (highlight skip counting, using logic to estimate, etc.).	Students will actively listen using predetermined listening norms (nodding, flea claps, etc.). Two or three partnerships will present their methods of solving to the class, responding to teacher prompts as necessary.
	Teacher will use think-pair-share to get students to discuss the following question: Why are measurement numbers bigger when using the smaller unit and smaller when using the WHOLE ruler to measure? (This will set students up to understand inches and feet in older grades.)	Students will engage in a think-pair-share, explaining their idea to their partner and actively listening when it is not their turn.
	Guided Practice (15 minutes):	
	Teacher follows the same modeling process from day one's lesson, working with a student volunteer to show how to complete Sage and Scribe AND reinforce key content from the Introduction to New Material. The only difference is that today students will use their non-standard rulers to estimate and measure the length of objects around the classroom.	Students will actively listen using predetermined listening norms (nodding, flea claps, etc.). One student volunteer will assist the teacher in modeling Sage and Scribe.
	Teacher directs students to work with their partner, walking around the room estimating & measuring items with their non-standard rulers (using the Sage and Scribe structure) and recording results on a premade recording sheet. Teacher will write notes on students who are clearly mastering and students who will likely need further/more direct guided practice.	Students estimate and measure items around the room using the cooperative learning structure Sage and Scribe (one student guides the other in how to complete a problem, then they switch).
	When most of the class has completed Sage and Scribe, teacher directs them to return to their seats. Teacher will instruct students to independently measure the length of their folders using their rulers and write the measurement on their whiteboards to show the teacher. Teacher will create a remediation group using this data *and* data from Sage and Scribe.	Students use their rulers to measure the length of their folders. Students write their answers on their personal whiteboards and show the teacher.
	Independent Practice (15 minutes):	
	Teacher instructs students to complete an independent "Estimate and Measure" sheet with different objects to measure from around the	

	room. Teacher will hand out different versions of the sheet to ensure that students won't crowd to measure one item. Teacher pulls a small group to remediate, and releases these students to independent practice when they show mastery of the objective. **Closure (5 minutes):** Teacher prompts students to think of what they could measure using their rulers in the real world using think-pair-share. Teacher has a few students share with the class.	Students use their rulers to estimate and measure items around the room. A small group of students works with the teacher in further guided practice. As students demonstrate mastery, they are released to independent practice. Students think-pair-share what they think they could measure in the real world with their rulers. Students share with the class as directed by the teacher. Students listen actively while other students share.
4	**Objective:** Students will estimate the length of objects on paper using measurement conventions and reasoning skills. **Introduction to New Material (10 minutes):** Teacher builds excitement by telling students that they are now such experts on measurement, they will try to figure out how they could solve measuring problems *even if they didn't have a ruler or tool*! This will help them solve questions they might see on standardized tests. Teacher shows a picture of a tree next to a tall building. Teacher uses think-pair-share to pose the question: How many trees tall is the building? How do you know? Teacher selects two or three partnerships to share how they estimated the height of the building using reasoning skills. Students may have multiple approaches (using your finger as a landmark to iterate tree-sized units using your other hand OR marking tree-sized units with a pencil, etc.). Teacher will guide students in clearly explaining these methods and record these methods on an anchor chart for use during guided practice. **Guided Practice (15 minutes):** Teacher follows the same modeling process from day one's lesson, working with a student volunteer to show how to complete Sage and Scribe AND reinforce key content from the Introduction to New Material. Today the students will be solving problems on a worksheet that follow the pattern of "How many _____ tall (or long) is the _____?" As teacher models with the student, he/she will model actively using the anchor chart from the Introduction to New Material to help "remind" him/her how to approach a problem. Teacher directs students to work with their partners to complete their worksheet using Sage and Scribe. Teacher circulates, collecting data	Students listen actively. Students engage in a think-pair-share, explaining how many trees could be stacked to match the building and *how they know*. Students will actively listen using predetermined listening norms (nodding, flea claps, etc.). Two or three partnerships will present their methods of solving to the class, responding to teacher prompts as necessary. Students will actively listen using predetermined listening norms (nodding, flea claps, etc.). One student volunteer will assist teacher in modeling Sage and Scribe. Students take turns being sage (coaching their partner on how to solve)

	on students who are mastering the objective and students who are not. When most of the class has completed Sage and Scribe, teacher passes out a half-sheet of paper with a single question on it to use as the final check for understanding. Teacher will make a small group based on student performance on this question. **Independent Practice (15 minutes):** Teacher instructs students to complete a worksheet that has more problems such as "How many _____ tall (or long) is the _____?" that align to the day's objective. Meanwhile, the teacher works with a small group of students who need more direct guided practice, releasing them to independent practice as they show mastery of the objective. **Closure (5 minutes):** Teacher will make clear the real-world applicability of today's lesson by leading students to think-pair-share about the following question: *Why is it helpful to be able to estimate the length or height of something?* Teacher has several students share their ideas with the class. Teacher guides students to the realization that it is important because most people do not carry rulers around with them, yet we still may need to estimate a measurement.	and scribe (using their pencil to solve the way the sage advices…unless they disagree!). Students independently complete the final check for understanding on their half-sheet. Students independently complete their worksheet. Meanwhile a small group of students works with the teacher in further guided practice. As students demonstrate mastery, they return to their seats to complete the independent practice. Students complete a think-pair-share about why estimating is important. Selected students share their ideas with the class. Students listen actively while other students share their ideas.
5	**Assessment:** Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps. **5 minutes:** Teacher explains that today we will have the opportunity to show all that we have learned this week about measuring length. Teacher sets expectations for the assessment. **40 minutes:** Teacher directs students to complete the assessment. Teacher walks around to monitor student progress but teacher does not assist students with anything related to the objective.	Students listen actively. Students complete assessment independently.

Summative Assessment Items: *Attach here.* For each summative assessment item, include an answer key or scoring rubric describing how points are to be awarded.

Summative Assessment and Answer Key:

*Numbers one and two on the assessment are each worth six points (one point for each close estimate and one point for each correct measurement). Numbers three through five are each worth one point. There are a total of 15 points that can be earned on the summative assessment and all assessment items will together determine a student's proficiency with the given standard. Students must earn at least 13 out of 15 points (87%) to demonstrate mastery. (The bar of mastery at CASA Academy is 85% or higher. However, for this assessment, it is not possible to earn exactly 85%).

*Student exemplar responses are included in blue.

1. Use a unifix cube as your unit to estimate and measure the following items:

Item	Estimate	Measure
Whiteboard marker	5 cubes (accept reasonable answers)	4 cubes
Piece of construction paper	10 cubes (accept reasonable answers)	12 cubes
Scissors	4 cubes (accept reasonable answers)	3 cubes

2. Use the ruler you created to estimate and measure the following items:

Item	Estimate	Measure
Bookcase height	(accept reasonable answers)	4 rulers OR 40 units
Teacher's Big Book	(accept reasonable answers)	3 rulers OR 30 units
Whiteboard length	(accept reasonable answers)	6 rulers OR 60 units

3. About how many rocks tall is the house?

a.) 1 rock
b.) 2 rocks
c.) 5 rocks
d.) 10 rocks

4. About how many dogs tall is the man?

_____ dogs 2 dogs

5. About how many soccer balls long is the car?

_____ soccer balls
7 OR 8 soccer balls