Curriculum Sample Template – 8 Pages Max. (12 pages for integrated ELA sample)

Grade Level	Fourth Grade	**Content Area**	Math
Course Title (grades 9-12 Only)	N/A		
Expected Prior Knowledge *List the knowledge/skills mastered earlier in the year that are foundational to the mastery of the Required Standard(s).*	Synergy fourth grade students will be able to solve problems using all four operations including multi-step word problems. Students will have a previous understanding of the vocabulary and the following vocabulary terms will be reviewed: multiplication, array, unknown, equal groups, factor, product, quotient, average, area, perimeter, and division.		
Alignment to Program of Instruction *Describe how the methods of instruction found in this sequence of lessons align to the Program of Instruction described in the application package.*	Synergy teachers will engage students in cooperative learning structures throughout the lesson. Lessons will be built using the Gradual Release of Responsibility. Synergy teachers will monitor student understanding and adjust instruction based upon student responses. Instructional strategies such as cooperative learning, differentiation, questioning, and meta-cognition will be used consistently during instruction.		
Standard Number* and Description *The standard number and description of the Required Standard(s) being instructed and assessed to mastery in the curriculum sample.*	**4.OA.A.2. Multiply and divide to solve word problems involving multiplicative comparison, *e.g. by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.***		
Materials/Resources Needed *List all items the teacher and students will need for the entire sequence of instruction (excluding common consumables)*	Whiteboards, markers, inch tiles, game cards with word problems, math notebooks, anchor charts, and independent practice worksheet.		

* ***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, Cluster, Standard (e.g., 6.EE.B.7). For HS Math, use Conceptual Category-Domain, Cluster, Standard (e.g., A-REI.C.6).*

Lesson (add as needed)	**Instructional Strategies -** *List and describe teacher actions, lesson by lesson, which will provide students with opportunities to engage the grade-level rigor defined by the Required Standard(s). Indicate alignment of instructional strategies to specific component(s) or content/skill(s) of the Required Standard/component.*	**Student Activities -** *Describe the activities, lesson by lesson, in which students will engage to allow them to master the grade-level rigor defined by the Required Standard(s). Indicate alignment of student activities to specific component(s) or content/skill(s) of the Required Standard/component.*
1	**Objective: The students will be able to identify and solve word problems that would use additive versus multiplicative comparisons.** **Introduction:** The teacher will tell students that over the next few lessons they will be learning how to use multiplicative comparisons but first we need to learn how to identify if you should use additive or multiplicative comparisons to solve a problem. We have used the CUBES strategy (Anchor Chart posted in classroom) in the past and know that we can identify key information to help us solve the problem. We may hear phrases such as more than, times as many, or what is the difference. These phrases will help us determine which type of problem we are encountering. **I-Do (Modeling)** The teacher shows the problem "Debbie has 5 apples and Karen has 15 apples. How many more apples does Karen have?" When we look at this problem we are having to compare how many more. The teacher will highlight how many more. That tells us we need to use additive comparison to solve the problem. The teacher draws a representation and writes the numeric representation underneath of 15 apples and takes away 5. The teacher then shows the problem "Debbie has 5 apples and Karen has 15 apples. How many times more apples does Karen have?" How are these problems different? The teacher highlights the word times and says this is how we know we are using multiplicative comparison and not additive. The teacher writes the key vocabulary for additive and the key vocabulary for multiplicative on an anchor chart. The teacher goes back to the multiplicative problem and represents it using the bar model. She puts 5 in the first bar and then adds two more bars and counts by fives. She asks, "how many times more apples does Karen have?" She shows the students that the answer is 3 and represents it numerically with 5X3. **We-Do (Guided Practice):** Teacher shows word problems to students that are either additive comparison or multiplicative comparison. Students will write what type of problem it is on a whiteboard. Teacher will do multiple problems. After checking to see that students can identify correctly the problem type, the teacher will have students work with partner to solve a variety of additive and multiplicative problems. **Check For Understanding:** The teacher will observe students solving problems with their partner to see if any additional we-do is needed. If 80% of the students get it then they move to independent practice and the other 20% assemble in a small group for re-teaching or more we-do practice.	Students talk with their partner to discuss how the 2 problems are different. Students will write whether it is additive or multiplicative on a white board and use the Pairs Compare structure to check answer. Students use Rally Coach to solve problems with their partner.

	You-Do (Independent Practice): Students complete a variety of additive and multiplicative problems independently. **Discussion Circle:** How can you identify if a problem is additive or multiplicative comparison?	Students solve problems independently Students will share answers during group discussion.
2	**Objective: The students will use multiplication to solve word problems that include multiplicative comparisons with models.** **Introduction:** We have been solving problems involving area and perimeter problems throughout the school year. Today we will use what we know about area and perimeter to help solve multiplication problems. If I was building a garden that was 3 feet long and 4 feet wide guild an array to match this problem. **I-Do (Modeling)** The teacher shows the problem " A rectangle is 2 inches wide. It is 3 times as long." Teacher will have students get out the colored tiles to create a model of the problem. First put two color tiles to represent the width. We need the length to be 3 times as long. If it is three times as long how long is the length? Now that we know the length is 6 we will build an array that matches this problem. **We-Do (Guided Practice):** Teacher poses problem " A rectangle is 5 meters wide. It is 4 times as long as it is wide. Draw an array to find its length. Teacher will write the matching equation 5 x 4 = x. Teacher will ask students to explain their thinking on how they solved the problem. **Check For Understanding:** The teacher will observe students recording their representation and equation use to see if any additional we-do is needed. If 80% of the students get it then they move to independent practice and the other 20% assemble in a small group for re-teaching or more we-do practice. **You-Do (Independent Practice):** Students return to their seat and complete a multiplication word problem sheet with similar problems independently. **Discussion Circle:** How can you use your knowledge of arrays to solve multiplication comparison problems?	Students will be given think time and they will write all the strategies that they know to solve area and perimeter problems and list them on their whiteboards. Students will solve the array problem on their whiteboard. Students will create the model as the teacher instructs. Students will think, pair, and share to find the length. Students will build an array to match the problem. Students will use tiles to construct a model to match the given problem. Students will label the length and width of their model. Students will use the Kagan Show Down structure to answer questions and defend their thinking to justify answers. Students will share answers during group discussion.
3	**Objective: The students will solve comparison word problems using division with models.** **Introduction:** Yesterday we worked on multiplication comparison problems today we will use comparisons that involve division. **I-Do (Modeling):** Distribute counters to each student. Teacher writes the sentence frame on the board. What if you have 50 counters and I have half as many as you do. How many do I have? Teacher will model how to find half of the given counters. **We-Do (Guided Practice):** Teacher poses question if Kiara learned 30 new spelling words last week and her little brother learned a third as many words,	Students will place 50 counters in front of them. Ask a few students to share and have a volunteer write the number sentence on the board that matches the student's sentence frame. Students will use counters or bar model to solve the problem and write a

	how many words did he learn? Teacher will ask students to use counters or bar model to solve the given problem. Students will be selected to write a matching equation to help solve the division word problem. **Check For Understanding:** The teacher will observe students recording their representation and equation use to see if any additional we-do is needed. If 80% of the students get it then they move to independent practice and the other 20% assemble in a small group for re-teaching or more we-do practice. **You-Do (Independent Practice):** Students return to their seat and complete a division comparison word. **Discussion Circle:** What strategies do you find the most efficient when solving division comparison problems?	matching equation. Students will complete word problems including justification on their work sheet. Students will complete independent practice using Kagan Sage and Scribe structure. Students will use work samples to demonstrate which strategy they used to solve the division problems and why they think the strategy is most efficient for them.
4	**Objective: Students will use both multiplication and division to solve comparison problems by using models and matching equations.** **Introduction:** The past few days we have used multiplication or division to solve word problems. Some of you said yesterday during discussion circle it may be possible to solve the problems we did yesterday with multiplication. Today we will try to be flexible in our thinking and solve the problems with different operations. **I-Do (Modeling):** Today we will play game with a partner to solve word problems. I will show you how to play this game. Teacher will post an anchor chart with steps to game listed. What You Do 1.Take turns. Pick a letter. 2.Read the word problem aloud. 3.Draw a bar model in your math notebook to model the problem. Then write an equation to solve the problem. 4.Your partner checks your work and reads the answer aloud. 5.Repeat until all the letters are used. The teacher will pick a card and model how to play the game with the students. **We-Do (Guided Practice):** Teacher will complete the game one more time playing the game with the students as her partner. The game steps will be completed as listed above. **Check For Understanding:** The teacher will observe students recording their representation and equation use to see if any additional we-do is needed. If 80% of the students get it then they move to independent practice and the other 20% assemble in a small group for re-teaching or more we-do practice. **You-Do (Independent Practice):** Students will be partnered up based on ability levels. The task cards will be	Students will follow as the teacher solves the first problem. Drawing the bar model and helping solve the problem. Students will draw a bar model to represent the problem presented in their notebook. Partners will check work.

	differentiated to meet the needs of the students. The teacher will question students as they work with partners and take notes on the teacher checklist as the students complete the game. The teacher will give an exit ticket for students to complete after the game is complete. **Discussion Circle:** Which problem was the easiest for you to solve and why?	Students will complete the task cards with a partner and follow the steps of the game. Students will bring their notebooks to discussion circle and share with a partner which problem was the easiest to solve with justification.
5	**Objective: The students will use both multiplication and division to solve comparison problems by using models and matching equations.** **Introduction:** We have solved two- step word problems this year with addition and subtraction. Today we will solve two- step problems that include multiplication as one of the strategies. **I-Do (Modeling):** Teacher presents the problem John has 25 trading cards. Lisa has 6 times as many as John. Juan has 162 more than Lisa. How many cards does Juan have? First we need to find the important information that is in our word problem. First we need to find out how many cards that Lisa has. I know that she has 6 times as many as John. Let's write an equation for that. The teacher writes 25 x 6= on the board. That equals 150. So we know that John has 150 cards. Now we need to find out how much Lisa has. We know she has 162 more that John. Which operation should I use to solve this part of the problem. Teacher writes the second part of the equation. 150 + 162= ? So how many trading cards does Lisa have? **We-Do (Guided Practice):** Janice sold 215 boxes of Girl Scout cookies. Nancy sold 3 times as many as Janice. Hailey sold 56 fewer that Janice. How many cookies did Hailey sell? What should I do first? Teacher calls on a random reporter to give the first equation needed. Teacher writes 215 x 3=? On the board. We know that Nancy sold 645 cookies but we still need to know how many Hailey sold. What should we do next? Teacher calls another random reporter to give the second equation. Teacher writes 645 – 56= ? on the board. Teacher asks for someone to share the total number of cookies that Hailey sold. **Check For Understanding:** The teacher will observe students recording their representation and equation use to see if any additional we-do is needed. If 80% of the students get it then they move to independent practice and the other 20% assemble in a small group for re-teaching or more we-do practice. **You-Do (Independent Practice):** Students will complete more multi-step word problems independently as	Students help use the CUBES model to find important information in the problem. Students complete work in their notebook as teacher models. Students solve the first part of the problem. Students think, pair, and share to decide which operation to use next. Students solve the addition equation. Students chorally respond 312 Students will use the CUBES method to identify key information in the word problem. Students will use numbered heads together to determine which is the first step to solving the word problem and present a matching equation. Students solve the first equation. Students will use numbered heads together to determine which is the first step to solving the word problem and present a matching equation. Students solve the second half of the word problem. Students share their answers to the problem. Students will complete independent practice.

	teacher monitors student progress for remediation and intervention. **Discussion Circle:** How can you ensure that you have solved all parts of a word problem?	Students will stand-up, hand-up, pair up to discuss question in discussion circle.
S.A.	*Provide an opportunity for the student to complete the summative assessment items which is clearly separate from instruction and guided or independent practice, and in which the student is assessed independently. In the Student Activities column, provide a brief description of the summative assessment (S.A.) items that will allow students to demonstrate mastery of the rigor of the Required Standard(s)/components, and the context in which the items will be administered.*	The summative assessment includes 4 items that will test student knowledge and understanding of standard **4.OA.A.2**: Students will demonstrate understanding by completing problems that include all four operations with multiplicative comparison. Students will show high proficiency of the standard by writing equations, completing visual representations, solving the problem and showing evidence of their answers.

Summative Assessment Items and Scoring: *Below, provide at least three Summative Assessment Items that together accurately measure student mastery of the application of the content and/or skills as defined by the grade-level rigor in the Required Standard(s). For each assessment item, provide an answer key or scoring rubric which clearly describes how assessment items are to be scored and how points will be awarded, such that mastery of the application of the content and/or skills as defined by the grade-level rigor in the Required Standard is clearly demonstrated by an acceptable score.*

Summative Assessment Item 1 (clearly identify answer key/scoring rubric, and acceptable score): (1 point for correct answer A and 1 point for correct answer B) 2 points total

1. A narrow rectangular banner is 5 inches wide. It is 6 times as long as it is wide.

A. Draw a diagram of the banner, and label its dimensions. Explain your thinking. Answer: rectangle labeled 5 as the width and 6 as the length.

B. Find the perimeter and area of the banner. Explain your thinking. Answer: Area: 5 X 6=30 Perimeter: 5+5+6+6=22

Summative Assessment Item 2 (clearly identify answer key/scoring rubric, and acceptable score): (1 point for part A, 1 point for part B and 1 point for part C) 3 points total

A. A red hat costs $18 and a blue hat costs $6. How many times as much does the red hat cost as the blue hat? Is this additive or multiplicative comparison?
Answer: (multiplicative)

B. Draw a model to support your answer to part A. Show your work and explain your thinking**.**
Answer:

(Possible explanation: I drew the bar model and counted by 6 and noticed that 3X6=18)

C. How many times as much does the red hat cost as the blue hat? Show your work and explain your thinking.
Answer: 3 times as much 3X6=18

Summative Assessment Item 3 (clearly identify answer key/scoring rubric, and acceptable score): (1 point for correct answer, 1 point for showing work correctly and 1 point for explaining your thinking) 3 points total

Jared sold 194 Boy Scout chocolate bars. Matthew sold three times as many as Jared. Gary sold 297 fewer than Matthew. How many bars did Gary sell? Show your work and explain your thinking. Answer: (194 X 3)- 297=M Correct answer is 285

Summative Assessment Item 4 (clearly identify answer key/scoring rubric, and acceptable score): (add as needed): (1 point for each correct answer) 2 points total

Solve the problems.

Which problems can be solved using the equation 7 x 9=?
Circle all the correct answers.

A Cleo has 7 times as many bananas as Arianna has. Cleo has 9 bananas.
How many bananas does Arianna have?

B Dylan has 9 oranges. Jane has 7 times as many oranges as Dylan.
How many oranges does Jane have?

C Liam has 7 cherries. Brian has 9 times as many cherries as Liam.
How many cherries does Brian have?

D Tina has 9 more peaches than Charlie. Charlie has 7 peaches.
How many peaches does Tina have?

Scoring Guide		
Highly Proficient	10/10	100%
Proficient	8/10	80%
Minimally Proficient	6/10	60%
Not Proficient	<6/10	<60%