	*Francisco que aixen in the night hand a large NAU and a large III	
	*Examples are given in the right-hand column. When submitting your lesson plan, you may either replace the given examples or leave them intact.	
Lesson Title	Extensions of Multiplication	
Lesson Title		
MN/CC State Standard(s) - direct quote from MN standards documents - if only focusing on one part of a given standard, underline the part being focused upon Central Focus - derived from standard - communicates general goal	4.1.1.2 <u>Use an understanding of place value to multiply a number by 10, 100</u> and 1000. 4.1.1.3 <u>Multiply multi-digit numbers, using efficient and generalizable procedures, based on knowledge of place value, including standard algorithms.</u> Solve multiplication problems involving multiples of 10.	
Learning Target - concisely says what students will be able to know and do - start with appropriate language function (active verb)	 I can use the understanding of place value to multiply a number by 10 or 100 and <i>record</i> the solution. I can <i>explain</i> how to multiply multi-digit numbers quickly, using a general procedure and knowledge of place value. I can <i>develop</i> a rule for extended multiplication facts. 	
Academic Language (AL) a. Domain-specific academic vocabulary b. General Academic vocabulary (words used in school across many subject areas) c. Syntax Sentence Frame: Example sentence that students can use to accomplish target d. Point in lesson where students will be given opportunity to use Academic Vocabulary (Note: It is important that this appear in TPA videotape segments	 a. Domain-specific academic vocabulary: extended multiplication facts, product b. General academic vocabulary: develop, attach, general procedure c. Sentence Frame (during guided practice/small groups): (Slide 10) When I see an extended multiplication fact, like (4 x 70=280), I notice When I see an extended multiplication fact like (50 x 50=2,500), I notice This helps me understand when I extend a multiplication fact, I d. In Phase 2 Assessment (below), students will Turn and Talk to their partner, using the above sentence stems and use at least 2 of the following academic vocabulary words in their responses: extend multiplication facts, product, attach. 	
Needed Modifications/Supports a. Identify how some form of additional support will be provided for some aspect of the lesson for given student(s) - visual, graphic, interactive - reduced text, rewritten text, fill-in the blank notes, word banks - graphic organizers, sentence frames	HB, JH, AK and DC will use the above sentence stems and word bank on the , slides 7 and 8 to create a rule. Reviewing academic vocab (develop, extend, attach, extended multiplication facts) at the beginning of the lesson and giving the definitions will help the students understand the mathematical concept of the learning target. Using mathematical models like base-10 blocks to multiply with an array, counting chips or sketching, in addition to using number sentences will help students who are in the concrete operational stage of learning, or have a language barrier. Using multiplication tables, grouping, and repeated addition, or skip counting will help students who are not proficient in multiplication.	

Resources & materials	Pre-assessment 4.1 questions, Show ME a	pp on iPads. Smart Board Slides:	
needed	Math 4.1, pencil, math journal page 105 on 106, multiplication tables, scratch		
	paper, anchor chart paper, markers, "I Have, Who Has?" cards, class roster,		
	self-evaluations		
Lesson Part	Activity Description	Activity Description	
	Teacher does:	Students do:	
Phase 1: State Target &	Pre-assessment: write in Show Me app:	Students do pre-assessment on	
a. Post the learning	What is 8 x 10? 6 x 20? 500 x 3? Take note as to who has the correct answers	Show Me app. Students read learning targets with	
target statement and indicate	and record (+) or (-) on roster.	the teacher.	
whether the teacher or	Lesson:	the teacher.	
student(s) will read it aloud	a. Teacher and students read the	We are going to make (create) a	
b. Engage students in	learning targets together.	rule to make it easier to multiply	
activity to elicit / build prior	Ask: What are we going to learn about	multiples of 10 and 100.	
background knowledge	today?		
	Vocabulary Check: Slide 2	Students stand with backs	
	Activate Prior Knowledge:	together. Each writes a number 0-	
	b. Today we are going to learn a new	9 on the classroom white board.	
	strategy of how to multiply by 10's and 100's. First, we need to review our	Teacher calls out the product and the first to respond with the correct	
	multiplication math facts. We are	factor, wins (no peeking!). Repeat	
	going to play a game called Back-To-	with other students.	
	Back. Here is how you play: (Explain		
	the game.)		
Phase 1 Assessment	Assessment:	Students play back to back using	
Check for Understanding	Take note on a class roster who needs	strategies to solve math facts.	
Explain the plan to capture	support in basic math facts. Use a (+) for	(repeated addition, multiplication	
data from this phase of the lesson	students who have strategies to solve math facts and a (–) for those who need	chart, memorization)	
1033011	support in basic multiplication facts.		
Phase 2: Teacher	Let's look at how to solve an extended		
Input/Inquiry	multiplication problem. Here is our first	Students follow along as teacher	
a. Explain procedures	problem: (Slide 4) Teacher reads the	reads.	
b. Demonstration of the task	story problem on the smart board slide		
c. Teacher think aloud	(6).		
	Ryaan has 40 bottle caps. Donnie has 20		
	times as many bottle caps as Ryaan. How many bottle caps does Donnie		
	have? Questions to ask:		
	What information do we know??	We know Ryaan has 40 bottle	
	What is the statement that	caps.	
	answers the question?	Donnie has bottle caps.	
	What type of math will we do?	Ctudente turn and tall	
	Turn and talk to your elbow buddy about	Students turn and talk.	
	how you are going to solve this problem.	Multiplication: because it says "times as many".	
	Ok. What are we going to do to solve this problem?		
	Why?	We need to multiply 20 times 40.	
	Give students 3-4min to solve this	Students solve 20*40=?	
	problem.		
	Whole group: What is 20 times 40? Have	The answer is 800.	
	students share their strategies. Look at	Students explain their strategies to	
	slide 4 to explain other strategies.	the whole class.	

	Students share answers in whole group. Make sure they justify their reasoning using mathematical models. Slide 7 and Journal Page 105: Turn and Talk: 1. What's 20 * 3 =? (60) Whole group share. How did you solve it? Continue with slide 7 explaining with money and 100's blocks. Students do problems 1-4 on with partners. Pass out base-10 blocks to those who need them. Correct page 105 as a class asking for student response for 1-4. Do page 106 #1-4 in groups. Share answers in whole group: slide 9.	Students get out pg.105. Students tell their elbow buddy the product. Students share other strategies to class. 2x3=6; so, 20x3=60 Students work through #2-3 on journal page 105. Students correct their journal page. Students work together on page then correct in whole group
Phase 2 Assessment Check for Understanding Explain the plan to check for understanding of steps/ procedures demonstrated in this phase.	Assessment: Turn and Talk (Academic Vocab and Sentence Stems) Slide7: • When I see an extended multiplication fact, like (4 x 70=280), I notice • When I see an extended multiplication fact like (50 x 50=2,500), I notice • This helps me understand when I extend a multiplication fact, I Roam around and clear up	(I notice a basic multiplication fact and 1 zero attached to the end of the product) (I notice a basic multiplication fact and two zeros attached to the end of the product) (you multiply the base fact, then attach 1 zero or 2 zeros (for a a multiple of 10 or 100), to the end of the product) Students share turn and talk
Phase 3: Guided Practice a. Paired/collaborative work b. Teacher(s) may roam & assist	misconceptions. Review poster on expectations and communication during group work. Put students into 4 groups. Hand out chart paper. Say: Reporters will be chosen after your rule is created. Tell each group where to go in the room (or hallway). Give students 5-8 minutes for group work. Hang chart paper on the whiteboard. Each reporter shares their rules. Discussion: Does this rule work every time? What did they do well? Need to improve anything? Discuss misconceptions: if a product ends in a zero, another zero needs to be attached. 2 zeros need to be attached to a product of 100. (40*5; 4*5 = 20 so 40*5=200)	Students work in groups to develop a rule for multiplying by 10's and 100's. Group member 5 reads the rule the group developed and justifies their reasoning. Rule 1: Find the basic fact and attach a zero to the back of the answer if the fact is multiplied by 10. (10's = attach 1 zero.) Rue 2: Find the basic math fact and attach 2 zeros onto the end of the answer. (100's = attach 2 zeros)
Phase 3 Assessment Check for Understanding Explain the plan to check for ability to apply demonstrated steps/ procedures during guided practice	Assessment: Walk around room and take notice of those who do and do not understand the rule of attaching zeros to a product, but using a +or – on a roster.	Students are collaborating to create a rule for extended multiplication facts for 10's and 100Wriote's.

Phase 4: Independent Practice Individual student work	- "I Have, Who Has?" Card Game Pass out cards. Have students write down the math fact using the new rule on scratch paper. Switch cards 2-3 times per table, recording each fact. They keep the last card and play the game. Allow 5-6 minutes to record their answers. After recording their answers, have the students circle their number sentence that matches their card. Tell them this is the card you will use during the game. The other numbers sentences were for practice. Explain the directions and play.	Students get a card, write down the number sentence and the product. Switch cards at the table. The student will then circle the last number sentence as this reflects the card they are now holding. Student with star on their card begins the game.
Phase 4 Assessment Check for Understanding Explain the plan to check for ability to apply demonstrated steps/ procedures during independent practice	Post-Assessment in Class Kick: Assess students on the rule for extended multiplication facts of 10 and 100: Rubric: 1, 2, 3 (6 points/ 2 points each) 1= 3 or less correct 2= 4 correct 3= 5+ correct	Class Kick App on iPad: 7 x 30=? (250) Explain the rule. (Multiply 7 x 3 = 21 then attach 1 zero = 210) 40 x 50=? (2,000) Explain the rule. (Multiply 4 x 5 = 20 then attach 2 zeros = 2,000)
Phase 5: Restatement & Closure a) Restate learning target b) Explain a planned opportunity for students to self-assess their perceived level of mastery for the target.	Assessment: Students will restate the learning target and self-assess their understanding of developing and using a rule to multiply ones by ten's, ten's by ten's and one's by hundred's.	Students place a check mark next to a 1, 2 or 3 on their self-assessment sheet and hand it in to the teacher.
Part 6: Summative Next Steps Attach a class roster (first names only) with space to indicate for each student the needed next steps of instruction.	Assessment Example: (3 columns on attac Reteach, Extend Slightly, Transfer to new s	

Note: When submitting your EdTPA for formal scoring, it is recommended that you conduct a planned pre-assessment to be done at the beginning of your 3-5 lesson sequence, as well as a planned post-assessment to be done at end of your 3-5 lesson sequence.

*This lesson plan is based on the work of David Denton (2013) with added modifications. An introductory video to the basics of the plan is available at https://www.youtube.com/watch?v=-yCj7IMyWAQ.

Updated 10/2016

TPA-Referenced Lesson Plan Template Name: <u>Becca Tveten</u> Date & Time of Lesson: <u>Feb 22, 2017 2-3 pm</u> Grade & Subject Area: <u>4th grade Math Unit 4.2</u>

	*Examples are given in the right-hand column. When submitting your lesson	
	plan, you may either replace the given examples or leave them intact.	
Lesson Title	Making reasonable estimates for products	
MN/CC State Standard(s)	4.1.1.4	
- direct quote from MN	Estimate products and quotients of multi-digit whole numbers	
standards	by using rounding, benchmarks and place value to assess the	
documents	reasonableness of results.	
- if only focusing on one part		
of a given standard, underline	4.1.1.5	
the part being focused upon	Solve multi-step real-world and mathematical problems	
	requiring the use of addition, subtraction and multiplication of	
	multi-digit whole numbers. Use various strategies, including	
	the relationship between operations, the use of technology,	
	and the context of the problem to assess the reasonableness of	
	results.	
Central Focus	Estimate and evaluate products.	
- derived from standard		
- communicates general goal		
Learning Target	Leave find a classification from provided to the first of the control of the cont	
- concisely says what students	I can find estimates for products and <i>evaluate</i> the reasonableness of	
will be able to know and do	my answer.	
- start with appropriate	I can solve multi-step mathematical problems, using various strategies,	
language function (active verb)	and assess the reasonableness of the results.	
Academic Language (AL)	a. Domain-specific academic vocabulary ex: perpendicular, separatist, fable	
a. Domain-specific academic	estimate, consumption, reasonable, average, survey	
vocabulary	b. General academic vocabulary ex: evaluate, assess	
b. General Academic	C.	
vocabulary (words used in	My estimate is	
school across many subject	When I evaluate my answer, it is/is not reasonable because	
areas)		
c. Syntax Sentence Frame:		
Example sentence that	d. In Lesson Part 2 Assessment (below), students will be asked to explain X to	
students can use to	a partner using at least 2 of the following words	
accomplish target		
d. Point in lesson where	The students are given the opportunity to use academic vocabulary during turn	
students will be given	and talks on slides 5-8 on the smart board.	
opportunity to use Academic		
Vocabulary (Note: It is		
important that this appear in		
TPA videotape segments		
Needed	Description the terms in the Math reserves and the Control of the	
Modifications/Supports	Preview the terms in the Math message: eggs, cups of milk, cups of yogurt for	
a. Identify how some form of	English Language Learners. Practice estimation strategies (use only one	
additional support will be	strategy if it is understood), use sentence stems, base-10 blocks, or draw	
provided for some aspect of	pictures to help solve story problems.	
the lesson for given		
student(s) - visual, graphic, interactive		
- reduced text, rewritten text,		
fill-in the blank notes, word		
banks		
Dailing		

- graphic organizers, sentence frames		
Resources & materials needed	Pre-assessment, Smart Board Slides 4.2, Math Master's pg 147 print outs, pencil, Math book page 286 (SRB), Show Me App on I pad, math journal pages 108-109, deck of cards	
Lesson Part	Activity Description Teacher does:	Activity Description Students do:
Phase 1: State Target & Activate Prior Knowledge c. Post the learning target statement and indicate whether the teacher or student(s) will read it aloud d. Engage students in activity to elicit / build prior background knowledge	 Learning Targets: I can find estimates for products and evaluate the reasonableness of my answer. I can solve multi-step mathematical problems, using various strategies, and assess the reasonableness of the results. Activate Prior Knowledge: (slide 4) Food Survey Data Pass out Math Masters page 147 to students. Do number 1 together. Then work in pairs to finish (fill out individually). SAVE for later. 	Student reads learning target to the class. Students work in pairs, but fill out individuallyx=
Phase 1 Assessment Check for Understanding Explain the plan to capture data from this phase of the lesson	Assessment: Walk around and watch for those who need more support in multiplying 7 by how many items per day they eat. Support in multiplication strategies. Mark on roster who needs help in using strategies to solve (+) or (-).	Students do number 2,3 in pairs but complete sheet individually. Set aside. Students complete 2,3 on Math Masters page 147.
Phase 2: Teacher Input/Inquiry d. Explain procedures e. Demonstration of the task f. Teacher think aloud	Student reads "What Do Americans Eat? Slide 5. Have students turn and talk to their partners discussing the questions on slide 5. Complete slide 6 together. Ask: How many bananas will a family of four eat in one year? Give them a couple minutes to work through it. Is your estimate reasonable? Remember, the estimate won't always be the same as the actual answer. Keep that in mind when you are comparing your estimates! Complete slide 8 for more practice: cups of milk for Riverside School? Evaluate your answer.	Student reads "What Do Americans Eat?" to the class. Students turn and talk: answer questions on smart board slide 4. (eating habits change, information may not be current; NO! that's an average amount, some are more and some are less.) Students do slide 6 on their own with Show Me App (25 #'s= estimate to 30; 24 ppl in our class= estimate to 20; 30 x20 = 600 lbs of bananas per year; actual: 24x25= 600. YES! Our estimate and actual answer is the same. 249 eggs = 250 eggs per year, per American; 250 x 4 ppl = 25x4=100 then attach 1 zero to the end of

Phase 2 Assessment Check for Understanding Explain the plan to check for understanding of steps/ procedures demonstrated in this phase	Mark on a roster (+) or (-) on Show Me app. Those who could estimate and evaluate slide 9. (+) those who need practice or support (-). Ask students if they agree or disagree with thumbs up or down. Mark roster with those who do not get a correct answer.	the product = 1,000 eggs per year for a family of 4. 736=700; 362= 400 700x400= 7x4=28; 700*400=280,000 cups Students do slide 9. After completion, ask students for a thumbs up or down if they agree with the answer.
Phase 3: Guided Practice c. Paired/collaborative work d. Teacher(s) may roam & assist	Slide 8: Students fill out the rest of their "What do you eat?" Math Master's page, questions 4-7. Compare your results with your neighbor. What do you notice about your results and the average American?	Students fill out the rest of their "What do you eat?" Math Master's page and compare their answers to the average American. Share their comparison with your neighbor.
Phase 3 Assessment Check for Understanding Explain the plan to check for ability to apply demonstrated steps/ procedures during guided practice	Turn and talk: compare your results of the Math masters page 147 to your neighbor. Are these reasonable estimates and results? Collect math message. Evaluate numbers 4-7. Make a list of the ones who need more support in Phase 4.	Students complete math master page 147 and assess their results. Share their assessment of the reasonableness of their results with their neighbor.
Phase 4: Independent Practice Individual student work	Journal Page 108: Do number one together; number 2-4 individually, then check it with a partner. Turn in Journal Page for assessment.	Students do journal page 108, 2-4 by themselves then compare with a partner. Turn in to box when done.
Phase 4 Assessment Check for Understanding Explain the plan to check for ability to apply demonstrated steps/ procedures during independent practice	Assessment: Collect journal page 108. Look for correct estimates and evaluations. Rubric: 3 correct: +3 2 correct: +2 1 correct +1 3's move on to next standard 2's Willl correct their mistakes and be reassessed. 1's will be put into a small group for reteach and more practice.	Students do journal page 108 for assessment. Turn in.
Phase 5: Restatement & Closure c) Restate learning target d) Explain a planned opportunity for students to self-assess their perceived	Assessment: Reread learning target at the end of the lesson. • I can find estimates for products	Students read learning targets and self-assess.
level of mastery for the target.	and <i>evaluate</i> the reasonableness of my answer.	

	I can solve multi-step mathematical problems, using various strategies, and assess the reasonableness of the results. Students will fill in a self-assessment and turn it in.
Part 6: Summative Next	Assessment Example: (3 columns on attached roster)
<u>Steps</u>	Reteach, Extend Slightly, Transfer to new situation/topic
Attach a class roster (first	
names only) with space to	
indicate for each student the	
needed next steps of	
instruction.	

Note: When submitting your EdTPA for formal scoring, it is recommended that you conduct a planned pre-assessment to be done at the beginning of your 3-5 lesson sequence, as well as a planned post-assessment to be done at end of your 3-5 lesson sequence.

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Updated 10/2016

	*Examples are given in the right-hand column. When submitting your lesson		
	plan, you may either replace the given examples or leave them intact.		
Lesson Title	Partitioning Rectangles		
MN/CC State Standard(s) - direct quote from MN standards documents - if only focusing on one part of a given standard, underline	4.1.1.3 Multiply multi-digit numbers, using efficient and generalizable procedures, based on knowledge of place value, including standard algorithms.		
the part being focused upon Central Focus - derived from standard - communicates general goal	Partition rectangles to solve multiplication problems.		
Learning Target - concisely says what students will be able to know and do - start with appropriate language function (active verb)	I can <i>create</i> and <i>compare</i> partitioned rectangles to find the product of multiplication problems.		
Academic Language (AL) a. Domain-specific academic	a. Domain-specific academic vocabulary: Distributive Property, place value		
vocabulary b. General Academic vocabulary (words used in	b. General academic vocabulary: Partition, decompose, value c. Sentence Frame:		
school across many subject areas) c. Syntax Sentence Frame: Example sentence that students can use to accomplish target d. Point in lesson where	I can partition a x rectangle. (8 x 24) can decompose into and (24, 20 and 4) I multiply x and x, then add the products. This helps me understand how to decompose and multiply multi-digit numbers.		
students will be given opportunity to use Academic Vocabulary (Note: It is important that this appear in TPA videotape segments	Students turn and talk to their neighbor explaining how they partitioned their rectangles and solved the multiplication problem, comparing their rectangle to their partners. Slide 5.		
Needed			
Modifications/Supports a. Identify how some form of additional support will be provided for some aspect of the lesson for given student(s) - visual, graphic, interactive - reduced text, rewritten text, fill-in the blank notes, word banks - graphic organizers, sentence frames	Review place value and the value of a digit. (In 49, the value of the 4 is 40). Explain the vocab words (Slide 2) and expressing partitioning means PART of the whole, or smaller parts of the whole. Use base-10 blocks to explain decomposing numbers. Use the stem sentences above to practice the method of partitioning a rectangle to multiply multi-digit numbers.		
Resources & materials			
needed			
	1		

	Unit 4.3 math slides, pencil, deck of cards, Math Journal pages 111, 112, multiplication table (back of math journal), Show Me app, pre-assessment 4.3 questions, Class Kick post assessment 4.3 on iPad, Factor Captor on iPad,	
Lesson Part	Activity Description	Activity Description
	Teacher does:	Students do:
Phase 1: State Target & Activate Prior Knowledge e. Post the learning target statement and indicate whether the teacher or student(s) will read it aloud f. Engage students in activity to elicit / build prior background knowledge	PRE_ASSESSMENT on Show Me app: 50 x 400 and 5 x 83 (slide 3). Learning Target: Student reads learning target to class. Teacher reads vocab words and students offer responses about their meanings. Slide 2.	Student reads learning target to the class. Students write down response to multiplication game and mental math slides on Show Me app.
	Prior Background Knowledge: Review Vocabulary: (Slide 2). Mental math (Slide 3.)	
Phase 1 Assessment Check for Understanding Explain the plan to capture data from this phase of the lesson	Take note on a roster (+) or (-) of who gets number 3 correct on slide 3: (5 x 83)	Students respond to mental math questions on Show Me app.
Phase 2: Teacher Input/Inquiry g. Explain procedures h. Demonstration of the task i. Teacher think aloud	Read Journal Page 111 together. See slide 4. Students solve story problem and share strategies using the document camera. Share strategy to partitioning a rectangle. Discuss decomposing the larger number of 24 x8 (24= 20+4). Slide 5: What happens when you don't have graph paper? Read story problem on slide 5 to students encouraging them to use partitioning on Show Me app on the iPad. Take suggestions of strategies of decomposing the numbers. Express the efficiency of breaking the rectangle down into fewest pieces possible (39=30+9 not 10x3x3x3). Remind the students about the rule they made of multiplying by 10's and 100's. Students share their work. Briefly discuss the distributive property.	Students solve story problem for 24 x 8-foot tile floor. Share strategies. (repeated addition, counting by one's) Students use Show Me app to solve 39x4=? Share strategies in whole group. Students get time to solve it. Share strategies.
Phase 2 Assessment Check for Understanding Explain the plan to check for understanding of steps/ procedures demonstrated in this phase	Assessment: Take data from Show Me app. (+) for students who get slide 5 correct. (-) for students who get it wrong. Mark on a roster.	
Phase 3: Guided Practice e. Paired/collaborative work	Slide 6 and 7: Students solve and share the equations for added practice. Walk	

f. Teacher(s) may roam & assist	around and notice who needs more support. Students do slides 8-9 in partners. Check as a class.	
Phase 3 Assessment Check for Understanding Explain the plan to check for ability to apply demonstrated steps/ procedures during guided practice	Collect pages 111, 112. On a roster, mark (+) for students who partition the rectangle correctly and (-) for those that do not.	
Phase 4: Independent Practice Individual student work	Correct page 112 after students complete the math journal page.	Students do page 112 individually.
Phase 4 Assessment Check for Understanding Explain the plan to check for ability to apply demonstrated steps/ procedures during independent practice	Post-assessment on Class Kick: 2 questions: 5 x 72 and 6 x 83. Rubric: Students get 1, 2 or 3. Mark on roster (2 points each). 1=2 correct 2= 3 correct 3= 4 correct	Students partition a rectangle in Seesaw post assessment: 5(70+2) = 360 6(80+3) =498
Phase 5: Restatement & Closure e) Restate learning target f) Explain a planned opportunity for students to self-assess their perceived level of mastery for the target.	Students read learning target together and fill out self-assessment then, hand it in. I can create and compare partitioned rectangles to find the product of multiplication problems.	Students read learning target and fill out self-assessment.
Part 6: Summative Next Steps Attach a class roster (first names only) with space to indicate for each student the needed next steps of instruction.	Assessment Example: (3 columns on attached roster) Reteach, Extend Slightly, Transfer to new situation/topic	

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