TEACHING THE CORE – EXEMPLAR LESSON PREPARATION GUIDE, MATHEMATICS

In addition to this completed document, please provide the videographer with a copy of the lesson plan, student handouts, and completed student work (after the lesson). If needed, the videographer can take a picture of any artifact rather than take the artifact itself.

School Name: Alice Maxwell Elementary School	Teacher Name: Heather Tinker
Room Number: 43	Period / Time of day (e.g. 8:45-9:30): 10:15-11:30
Cluster(s), standard(s) or parts thereof targeted in the lesson (see table below): 5.NF.1 Add and subtract fractions with unlike denominators (including mixed numbers) by replacing a given fraction with equivalent fractions in such ways to produce an equivalent sum or difference of fractions with like denominators. 5.NF2. Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators by using fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess reasonableness of answers. Aspect of rigor targeted in the lesson: The aspect of rigor targeted for this lesson will be conceptual understanding and application.	Topic of lesson: Adding and Subtracting Fractions with unlike denominators Core Action Indicator(s) most exemplified in this lesson: Core Action 1 and Core Action 2 Materials and instructional resources used in this lesson: Active Board Flip chart Problem solving- Salt Problem Class discussion board **Handouts:** Evil Plan/Quiz Problem with Graphic Organizer Exit Ticket: Money Fractions –Multistep problem. Demographics of the class (e.g., % ELL, % SPED): 43% of the class is ELL 1.5% of the class is on a Tier for Mathematics instruction .03% of the class is SPED

EXEMPLAR LESSON REQUIREMENTS

The CCSS Instructional Practice Guides for Mathematics[1] provide concrete examples of what the CCSS look like in daily planning and practice through Core Actions and related Indicators. Please use this guide as an integral resource as you plan your lesson.

For K-8, lessons should target the grade level cluster(s), grade level content standard(s) or part(s) thereof as outlined in the table below. These priorities represent a subset of the major work[2] of the grade for K-8. For High School, reference the Widely Applicable Prerequisites[3] for a list of domains and clusters to focus on with the concepts listed in the table below as the top priority.

Grade	First Priority	Close Second
K	K.CC	K.OA
1	1.NBT	1.OA
2	2.OA.A, 2.OA.B	2.NBT
3	3.OA (Excluding 3.OA.9)	3.NF, 3.MD.C
4	4.NF, 4.NBT.B	4OA.A
5	5.NF, 5.NBT.B	5.MD.C
6	6.RP.A, 6.EE, 6.NS.1 (showing in particular how it arises from 5.NF.7)	6.NS.C
7	7.RP.A, 7.NS.A	7.EE.3
8	8.EE.B, 8.EE.C, 8.F.A	8.F.B, 8.SP.3 (supporting cluster)

HS	- Variety of modeling tasks. - Multi-step quantitative problems with lots of units and rates - Applications leading to 2 simultaneous linear equations in two variables - Applications of linear, quadratic , and exponential functions - Seeing and using structure practice with symbolic manipulation "Thinking like a mathematician" (e.g., making a conjecture, checking consistency, generalizing) - Working with y=mx + b	If the lesson targets geometry in HS: the lesson should be focused on using algebra to solve measurement problems and/or the use of coordinate geometry

LESSON DESCRIPTION

Please provide a brief description of this lesson, and where it fits into the unit and instructional year. Please provide a short, high-level lesson outline, including what is covered in the lesson before and after this lesson.

Prior to this lesson the students have been working on addition and subtraction strategies for finding sums and differences with unlike denominators. Students have explored the area model, number lines, and use of equations. This lesson comes at the end of the addition and subtraction unit to meet the needs of the 5.NF.2 standards of applying real world problems and assessing reasonableness of answers. The preceding lessons will continue to focus on real world problems and differentiation to ensure all students have a grasp of the concept before the unit assessment is given.

Please tell us anything else you feel is important to know about this lesson.

Students should be secure in addition and subtraction strategies at this point in the lesson. Students will have limited experience to applying these strategies to real world problem such as the ones presented in this lesson.

INTERVIEW QUESTIONS
You may be asked the following questions in an interview during the video process. Please review and be prepared to share your thoughts.

- Talk about the standard(s) (or cluster(s)) targeted in this lesson. What did you do to make the lesson reflect the full intent of that standard?
- Which of the Core Action indicator(s) do you think this lesson best exemplifies? Why?
- How does this lesson connect to and build on students' prior skills and knowledge?
- Discuss how this lesson illustrates the Shifts required by the CCSS.
- How did the students handle this lesson? Did they understand the mathematics of the lesson? How do you know?
- Explain how you differentiated in this lesson? Did all students get opportunities to work on grade-level content?
- Which behaviors from Core Action 3 did the students' best exemplify in this lesson? What actions have you taken as a teacher to make that happen?
- How did you teach this lesson prior to the CCSS? What is the same and what is different?
- What is the biggest change for you with the adoption of the CCSS?
- What changes have you seen in your students since you started teaching the CCSS?

Lesson Plan

Subject/Grade: Fractions/ 5th grade	Period/Time Frames: 10:15-11:30
Time Allotment: 75 minutes	Teaching Date: 2/26/14

Standards (National/State) - Standard # and Standard:

5.NF.1 Add and subtract fractions with unlike denominators (including mixed numbers) by replacing a given fraction with equivalent fractions in such ways to produce an equivalent sum or difference of fractions with like denominators.

5.NF2. Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators by using fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess reasonableness of answers.

Student Outcomes: The students will review previous lesson content by partner teaching addition and subtraction of mixed numbers including models and equations.

The students will apply these models and equations to mixed number addition and subtraction word problems.

Materials/Media/Technology:

Active Board Flip chart Problem solving- Salt Problem

Class discussion board

Handouts:

Evil Plan/Quiz Problem with Graphic Organizer

Exit Ticket: Money Fractions –Multistep problem.

Assessment:

Diagnostic – Before student work begins: The previous lessons exit tickets will be explored to produce a "My Favorite No" for student discussion	Formative/Informal – During lesson: Teacher observation of white board practice and group practice will be used to determine next steps within the lesson (i.e. how many problems to practice as a whole group or in partners)	Summative/Formal – After lesson: Exit Ticket: Money Fractions –Multistep problem.

Teaching/Learning Procedures:

Step and time allocation (min)	Teaching/Learning Activities	Handouts, supplies, points to remember
Launch/Engage 20 min 10:15-10:35	Warm-up Students partner teach the following problems on white boards • $\frac{4}{3} - \frac{5}{7}$ • $1\frac{3}{12} - \frac{2}{3}$ • $3 + 1\frac{1}{4}$ • $\frac{1}{4} + \frac{9}{8}$ Extra problems will be provided for the fast finishers to work on while other students finish their partner teaching Return to desks to analyze ""My Favorite No" from previous lesson's exit tickets. **TBD** Students will write the problem as displayed on the Active board. Students will think first about what observations they have made then discuss with their table partner what went wrong.	Warm-up • Student notebooks • Student white boards/markers • Student should know math partners ahead of time "My Favorite No" • Previous lesson's exit tickets • one to discuss as a group *Note: "My favorite no" is a student sample from a previous lesson that did not quite understand the concept. The teacher determines the example to use. The students will not know whose work it is.*

Investigation *40 min* *10:35-11:15*	Whole class discussion Salt Problem Students read the problem with the teacher. Use thinking time to understand what the problem is asking. Through teacher questioning, students help the teacher solve the problem. Different strategies will be displayed and discussed whole group after enough time has elapsed. Math Partner Work Evil Plan Problem Students will work in their table groups to solve a similar problem as the one done whole class. Students will be instructed to develop a second strategy independently if they finish. Student Practice If time allows have math partners work together to solve the quiz problem Debrief: Have students identify how the problems were similar and what strategies were used to solve them.	Whole class instruction • Active board Flip Chart on problem solving for Salt Problem Group Work/Partner Work • double sided Evil Plan Problem/Quiz problem with problem solving graphic organizer
Closure *10 min* *11:15-11:30*	Exit Ticket: Students will get the Money Fractions – Multistep problem. Students will have independent time to show their work and assess their reasonableness of their answers.	Exit Ticket These will be collected for a future My Favorite No to analyze as a whole class.

Sinister Stan stole $3\frac{3}{4}$ oz of slime from Messy Molly, but his evil plans require $6\frac{3}{8}$ oz of slime. He stole another $2\frac{3}{5}$ oz from Rude Ralph. How much more slime does Sinister Stan need for his evil plan?

Before	During	After
What is the question asking? (write in your own words in a complete sentence)	**Carry out my plan** (show your work):	**Check** (is my answer correct?)
_____		
_____		
_____		
_____		
_____		
	Does this make sense? (Justify your result)	**What strategies did my classmates use?** (write them down)
	_____	
What is my plan?	_____	
	_____	
_____	_____	
_____	_____	
_____	**Do I need to change?** (did your plan work?)	
_____	_____	
	_____	

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Gavin had 20 minutes to do a three-problem quiz. He spent $9\frac{3}{4}$ minutes on question one and $3\frac{3}{4}$ minutes on question two. How much time did he have left for question three? Write your answer in minutes and seconds.

Before	During	After
What is the question asking? (write in your own words in a complete sentence) _____ _____ _____ _____ **What is my plan?** _____ _____ _____ _____	**Carry out my plan** (show your work): **Does this make sense?** (Justify your result) _____ _____ _____ _____ **Do I need to change?** (did your plan work?) _____ _____	**Check** (is my answer correct?) **What strategies did my classmates use?** (write them down)

Name: _____

Exit Ticket: Money Fractions

Cheryl bought a sandwich for $5\frac{1}{2}$ dollars and a drink for $2\frac{6}{10}$ dollars. If she paid for her meal with a $10 bill, how much money did she have left? Write your answer as a fraction and in dollars and cents.

Before	During	After