**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.**

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| School Name: Alice Maxwell Elementary School | Teacher Name: Heather Tinker |
| Room Number: 43 | Period / Time of day (e.g. 8:45-9:30): 10:30-11:30 |
| Cluster(s), standard(s) or parts thereof targeted in the lesson(see table below):5.NF.3. Interpret a fraction as division of the numerator by the denominator (a/b = a ÷ b). Solve word problems involving division of whole numbers leading to answer in the form of fractions or mixed numbers, e.q., by using visual fraction models or equations to represent the problem. Aspect of rigor targeted in the lesson:The aspect of rigor targeted for this lesson will be conceptual understanding and application. | Topic of lesson:Interpreting fractions as division problems. |
| Core Action Indicator(s) most exemplified in this lesson:Core Action 1 and Core Action 2 |
| Materials and instructional resources used in this lesson:Student white boards/markersPoster paper with “How many different ways can you express $\frac{3}{4}$?Flip chart with steps square manipulatives**Handouts:**Ice Cream ProblemSoda Exit Ticket |
| Demographics of the class(e.g., % ELL, % SPED): 43% of the class is ELL1.5% 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]](#footnote-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]](#footnote-2) of the grade for K-8. For High School, reference the Widely Applicable Prerequisites3 for a list of domains and clusters to focus on with the concepts listed in the table below as the top priority.

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| **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 |
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**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 is the first lesson in a unit on multiplication and division of fractions. This will be the students first exposure to understanding fractions as division problems. Students will be expected to use problem solving strategies and perseverance throughout this lesson.

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

The students might not make the immediate connection between the problems presented and representing them as fractions. I will try to provide examples and opportunities to make this explicit.

**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?

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| **Lesson Plan** |
| Subject/Grade: Fractions/ 5th grade | Period/Time Frames: 10:30-11:30 |
| Time Allotment: 60 minutes | Teaching Date: 3/17/14 |
| **Standards (National/State) -** Standard # and Standard: 5.NF.3. Interpret a fraction as division of the numerator by the denominator (a/b = a ÷ b). Solve word problems involving division of whole numbers leading to answer in the form of fractions or mixed numbers, e.q., by using visual fraction models or equations to represent the problem.  |
| **Student Outcomes:** The students will use problem solving strategies and persevere to come up with solutions for word problems. |
| **Materials/Media/Technology:** Student white boards/markersPoster paper with “How many different ways can you express$\frac{3}{4}$?Flip chart with steps square manipulatives**Handouts:**Ice Cream problem |
| **Assessment:**Diagnostic – The lesson will begin with a number talk. Students will express a fraction as many ways as they can. This will show me if they understand that fractions represent division problems as well. | 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:  |
| **Teaching/Learning Procedures:** |
| Step and time allocation (min) | Teaching/Learning Activities | Handouts, supplies, points to remember |
| *Launch/Engage**15 min**10:30-10:45* | Warm-upNumber DiscussionHow many different ways can you express $\frac{3}{4}$?* Students come down to the discussion area with whiteboards and markers.
* First students will be asked to not use the whiteboards (yet)
* Teacher will call for responses
* If responses are not what is desired students will have an opportunity to show the fraction different ways on their white boards then share with a partner
* Teacher will record responses on chart paper.

  | Warm-up* Student white boards/markers
* Poster paper with “How many different ways can you express $\frac{3}{4}$?

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| *Investigation**30 min**10:45-11:15* | Whole class discussion* Hand out the ice cream problem
* Students will read, highlight and annotate the problem
* Give students some thinking time as to how they will solve the problem.
* Teacher will remind students about the different ways to problem solve (draw a picture, model with math, act it out using objects)
* Students will have about 10 minutes to discuss with their groups.
* Teacher will walk around a monitor discussions and provide guiding questions to keep the students on task
* Teacher will select student examples to display on the board
* students will share and discuss and ask questions of others
* Teacher will debrief and connect the students work to the idea in the standard of representing the problem as division.
 | * Flip chart with steps
* square manipulatives
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| *Closure**10 min**11:15-11:30* | Exit Ticket:Students will work on an exit ticket to show their understanding of the concept to be evaluated by the teacher to guide further lessons.  | Exit Ticket These will be collected for a future My Favorite No to analyze as a whole class.  |

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

Miss Brown decided to reward her small math group with ice cream. She purchased 3 cups of ice cream to share between 4 students. If Miss Brown were to share the ice cream equally, how much ice cream would each student get?

Miss Phariss wanted to share 2 bottles of Dr. Pepper with her 2 closest friends. Miss Phariss wants to make sure everyone gets the same amount of soda. How much soda will each person receive?

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

1. [www.achievethecore.org/math-common-core/instructional-practice](http://www.achievethecore.org/math-common-core/instructional-practice) [↑](#footnote-ref-1)
2. [www.achievethecore.org/focus](http://www.achievethecore.org/focus)

3 [www.achievethecore.org/prerequisites](file:///C%3A%5CUsers%5Cklevitan-reiner%5CAppData%5CLocal%5CMicrosoft%5CWindows%5CTemporary%20Internet%20Files%5CContent.Outlook%5CDI0ZCWHS%5Cwww.achievethecore.org%5Cprerequisites) [↑](#footnote-ref-2)