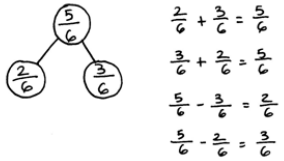
Grade Level	4	**Content Area**	Mathematics
Course Title (grades 9-12 Only)	NA		
Expected Prior Knowledge *List the knowledge/skills mastered earlier in the year that are foundational to the mastery of the Required Standard(s).*	The scholars will have mastered the previous skills in third grade of understanding a fraction 1/*b* as the quantity formed by 1 part when a whole is partitioned into *b* equal parts; understand a fraction *a*/*b* as the quantity formed by *a* parts of size 1/*b*. Scholars will also understand a fraction as a number on the number line; represent fractions on a number line diagram. The scholars will have knowledge of explaining equivalence of fractions in special cases, and compare fractions by reasoning about their size. The scholars will also have an understanding that two fractions as equivalent (equal) if they are the same size, or the same point on a number line, recognize and generate simple equivalent fractions, e.g., 1/2 = 2/4, 4/6 = 2/3, express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. *Examples: Express 3 in the form 3 = 3/1; recognize that 6/1 = 6; locate 4/4 and 1 at the same point of a number line diagram and* compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.		
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.*	The Arizona College and Career math standards form the basis for The Grande Innovation Academy's math curriculum. Scholars will learn standards using the Arizona College and Career building from year to year. EngageNY will be used along with manipulatives to build conceptual understanding. First in Math online will be used for developing automaticity with math facts to increase mathematical fluency. Scholars, Kindergrarten through Eighth Grade, will annually participate in The Grande Innovative Academy's Math Olympics program to generate motivation for math fluency.		
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.NF.B.3.** *Understand a fraction a/b with a >1 as a sum of fractions 1/b.* *a. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.* *d. Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using fraction models and equations to represent the problem.*		
Materials/Resources Needed *List all items the teacher and students will need for the entire sequence of instruction (excluding common consumables)*	• Whiteboards • Markers • Number Line • Rulers • Interactive Math Notebook/Journal • Fraction Strips		

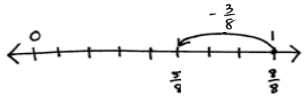
* ***Standard Number****: For English Language Arts (Reading and Writing), use Grade, Strand, Standard (e.g., 3.RI.2). For K-8 Math, use Grade, Domain, Cluster, Standard (e.g., 6.EE.B.7). For HS Math, use Conceptual Category-Domain, Cluster, Standard (e.g., A-REI.C.6).*

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	**Anticipatory Set:** TW ask scholar to use a number bond to show the relationship between $\frac{2}{6}$, $\frac{3}{6}$, and $\frac{5}{6}$. Then, use the fractions to write two addition and two subtraction sentences. **Objective and Purpose:** TW post on board for scholars to write in interactive daily math journal. Scholars will use visual models to add and subtract two fractions the same units, including subtracting from one whole. **Instructional Delivery: Whole Group** TW hand out number line templates and display Problem 1 on the board. TW ask scholars to find the value of 1 – 3/8. Are the units the same? TW introduce key points. **Key Points:** ▪ Benchmark (standard or reference point by which something is measured) ▪ Common denominator (when two or more fractions have the same denominator) ▪ Denominator (e.g., the 5 in $\frac{3}{5}$ names the fractional unit as fifths) ▪ Fraction greater than 1 (a fraction with a numerator that is greater than the denominator) ▪ Line plot (display of data on a number line, using an x or another mark to show frequency) ▪ Mixed number (number made up of a whole number and a	**Anticipatory Set:** Scholars will draw the number bond and then write two addition and two subtraction sentences.  **Objective and Purpose** Scholars will write posted objective and purpose in interactive daily math journal. **Instructional Delivery: Whole Group** Scholars will take their number line templates and glue into their interactive daily math journal. **Modeling:** Scholars will observe teacher defining what a whole is in fractional terms. Scholars will rename one whole as 8 eighths and write intier interactive math journal and record their work from the number line as a number sentence. **Check for Understanding** (CFU, using Teach Like a Champ) Scholar will give teacher a "thumbs up or a thumbs down". If scholar doesn't respond in five seconds, scholar needs to be ready as there is no opt out and teacher will come back again. **Guided Practice: Small Groups** Scholars will engage in small groups listening for guidance from teacher.

fraction)

- Numerator (e.g., the 3 in $\frac{3}{5}$ indicates 3 fractional units are selected)

Modeling:
TW display number line on board and ask scholars to rename the one as eighths.



$\frac{8}{8} - \frac{3}{8} = \frac{5}{8}$

$1 - \frac{3}{8} = \frac{5}{8}$

TW model the subtraction using a number line. "To simplify our number lines, use hash marks to show the eighths. Label 0, 1, and the numbers used to solve."

TW now model to show work from the number line as a number sentence.

$\frac{8}{8} - \frac{3}{8} = \frac{5}{8}$ or $1 - \frac{3}{8} = \frac{5}{8}$

Check for Understanding (CFU, using Teach Like a Champ)
TW will circulate the room and say "Give me a thumbs up or thumbs down". TW wait no more than five seconds for scholar responses. If no response TW call on another scholar while circulating the room and then will go back to scholar with no response and ask again.

Guided Practice:
Scholars will participate in group exercises to promote concept development in understanding addition and subtraction of fractions as joining and separating parts referring to the same whole.
TW distribute number line templates, dry erase boards and dry erase markers at each table.

Independent Practice:
TW provide scholars with problem sets to do their personal with an exit ticket and allotted time of 10 minutes.

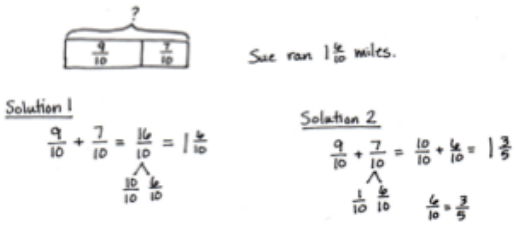
Closure/Exit Ticket:
TW read the problem 1 – 2/5 to scholars. TW circulate the room and hole punch notecards with to verify closure.

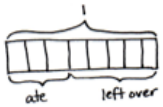
Scholars will work with a partner to show 1-2/5 is the same as 5/5-2/5 using a number line.

Independent Practice:
The scholars will do their personal best with high quality work correctly to complete the problem set within the allotted 10 minutes.

Closure/Exit Ticket:
Scholars will solve the following problem on a notecard. Scholar will model the problem with a number line, and solve by both counting up and subtracting.

1 - 2/5

2	**Anticipatory Set:** TW tell scholars "Fractions are all around us! Make a list of times that you have used fractions, heard fractions, or seen fractions. Be ready to share your ideas. **Objective:** TW post objectives onto the board for scholars to write into their interactive daily math journals. Scholars will solve word problems involving addition and subtraction of fractions. **Instructional Delivery: Whole Group** Problem 1: "Sue ran $\frac{9}{10}$ mile on Monday and $\frac{7}{10}$ mile on Tuesday. How many miles did Sue run in the 2 days? " Have two pairs of scholars who can successfully model the problem, work at the board while the others work independently or in pairs at their seat. Review the following questions before beginning the first problem. • Can you draw something? • What can you draw? • What conclusions can you make from your drawing? As scholars work, circulate. Reiterate the questions above. After two minutes, have the two pairs of scholars share only their labeled diagrams. For about one minute, have the demonstrating scholars receive and respond to feedback and questions from their peers. TW give everyone two minutes to finish work on that question, sharing their work and thinking with a peer. All should then write their equations and statements of the answer. **Check for Understanding** (CFU, using Teach Like a Champ) TW circulate the room and on teachers call will use "fist to five" to assess understanding. **Guided Practice: Small Groups/Pairs** .TW guide project next problem on the board. "Mr. Salazar cut his son's birthday cake into 8 equal pieces. Mr.	**Anticipatory Set:** The scholars will sit at their tables and raise their hands accordingly. Two or three scholars will share their responses as called upon. **Objective and Purpose:** The scholars will write in the lesson objective and purpose in their interactive daily math journals. The scholars will solve word problems involving addition and subtraction of fractions. **Instructional Delivery: Whole Group** Scholars will write the problem down in their interactive daily math journal. Scholars will then begin to solve and share their solutions with their table.  **Check for Understanding** (CFU, using Teach Like a Champ) Students will be using the strategy "fist to five" to communicate their level of understanding. On teacher's command students will hold up either a fist (no understanding), 1 finger for some understanding …..5 fingers for complete understanding. If scholar doesn't respond in five seconds, scholar needs to be ready as there is no opt out and teacher will come back again. **Guided Practice: Small Groups/Pairs** Scholars will work independently to solve and then check their answer with their table for comparison.

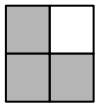
	Salazar, Mrs. Salazar, and the birthday boy each ate 1 piece of cake. What fraction of the cake was left?” TW ask “Can you draw something?” “What conclusions can you make from your drawing?” **Independent Practice:** TW provide scholars with problem sets to do their personal best completing 4 problems with an exit ticket and allotted time of 10 minutes. **Closure/Exit Ticket:** TW project a final problem on the board. **“**Maria spent $\frac{4}{7}$ of her money on a book and saved the rest. What fraction of her money did Maria save?” TW circulate the room and check scholars work. TW will cold call on some scholars to share their responses.	 $\frac{5}{8}$ of the cake is left. Solution 1 $1-\frac{3}{8}=\frac{8}{8}-\frac{3}{8}=\frac{5}{8}$ Solution 2 $\frac{1}{8}+\frac{1}{8}+\frac{1}{8}+x=\frac{8}{8}$ $\frac{3}{8}+x=\frac{8}{8}$ $\frac{3}{8}+\frac{5}{8}=\frac{8}{8}$ $x=\frac{5}{8}$ **Independent Practice:** The scholars will complete 4 independent problems in the problem set. Scholars will have 10 minutes to complete and do their personal best with high quality work correctly completing all four problems for mastery. **Closure/Exit Ticket:** Scholars will solve the problem onto their personal white board. When they have completed the problem they will raise their hand and wait for the teacher to come and check.
SA	*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.*	**Direct Instruction:** Scholars will be seated at their tables listening for directions. **Independent Practice:** The scholars will be seated at their tables to complete their math and solving fraction world problems involving addition and subtraction of fractions with like denominators using visual fraction models or equations to represent the problem.

Summative Assessment Item 1: Given the following instructions, the scholar will solve. A total of 20 points is possible for this assessment. Scholars will receive a maximum of 12 points for correctly drawing and shading the fractions (possible 4 points for each of the three fractions given) and a possible 4 points for properly recording their decomposition of two of the fractions. (See answer key) Scholar mastery will be set at 15 points. (75%)

1. Let each small square represent $\frac{1}{4}$.

   a. Using the same unit, draw and shade the following fractions.
   Represent each as a sum of unit fractions.

Example: $\frac{3}{4}$



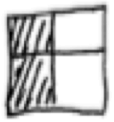
i. 1

ii. $\frac{2}{4}$

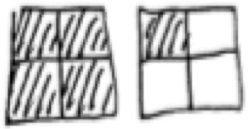
iii. $\frac{5}{4}$

Answer Key:

$1 = \frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$



$\frac{2}{4} = \frac{1}{4} + \frac{1}{4}$



$\frac{5}{4} = \frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$

Record the decompositions of parts

(i) and (iii) using only fourths.

i. 1 =

$1 = \frac{2}{4} + \frac{2}{4}$

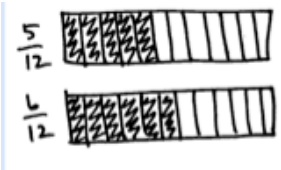
$\frac{5}{4} = \frac{2}{4} + \frac{3}{4}$

iii. 5/4 =

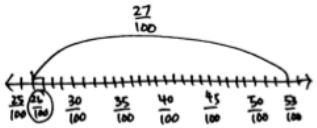
Summative Assessment Item 2: Given the following instructions, the scholar will solve. A total of 16 points is possible for this assessment. Scholars will receive a maximum of 4 points for correctly answering each of the following questions. (See answer key) Scholar mastery will be set at 12 points. (75%)

2. Fill in the blanks to make each number sentence true. Draw a number line, tape diagram, or area model to represent each problem.

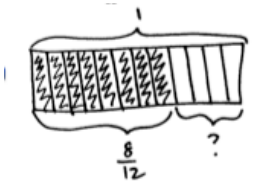
a. _____ $= \frac{5}{12} + \frac{6}{12}$



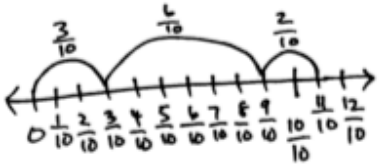
b. $\frac{53}{100} - \frac{27}{100} =$ _____



c. $\frac{8}{12} +$ _____ $= 1$



d. $\frac{3}{10} + \frac{6}{10} + \frac{2}{10} =$ _____



Summative Assessment Item 3: Given the following instructions, the scholar will solve. A total of 8 points is possible for this assessment. Scholars will receive a maximum of 4 points for correctly answering each of the following questions. (See answer key) Scholar mastery will be set at 6 points. (75%)

3. Ray, Robin, and Freddy went fishing.

a. They spent $\frac{1}{6}$ of their money on water, $\frac{4}{6}$ of their money on lunch, and the rest on worms.
What fraction of their money was spent on worms? Draw a model and write an equation to solve.

b. Ray, Robin, and Freddy each had identical containers of worms.
Ray used $\frac{3}{8}$ container. Robin used $\frac{6}{8}$ container, and Freddy used $\frac{7}{8}$ container.
How many total containers of worms did they use?

Answer Key	Evidence of solid reasoning with a correct answer. (4 Points per correct answer)
Summative Assessment 1 **20 points total**	The student correctly does the following: a. Draws and shades to represent the three given fractions and represents each as a sum of unit fractions: i. $1 = \frac{1}{4}+\frac{1}{4}+\frac{1}{4}+\frac{1}{4}$ ii. $\frac{2}{4} = \frac{1}{4}+\frac{1}{4}$ iii. $\frac{5}{4} = \frac{1}{4}+\frac{1}{4}+\frac{1}{4}+\frac{1}{4}+\frac{1}{4}$ b. Records the decomposition using two addends. (Answers may vary.) i. $1 = \frac{3}{4} + \frac{1}{4}$ iii. $\frac{5}{4} = \frac{3}{4} + \frac{2}{4}$
Summative Assessment 2 **16 points total**	The student correctly completes all four number sentences and accurately models each problem using a number line, tape diagram, or area model: a. $\frac{11}{12}$ b. $\frac{26}{100}$ c. $\frac{4}{12}$ d. $\frac{11}{10}$
Summative Assessment 3 **8 points total**	The student correctly completes all two of the parts: a. Answers $\frac{1}{6}$ and writes an equation and draws a model. b. Answers $\frac{16}{8}$ or 2 containers.