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DepED
DEPARTMENT OF EDUCATION

Lesson Exemplar for Mathematics

Quarter 3
Lesson
7

Lesson Exemplar for Mathematics Grade 4
Quarter 3: Lesson 7 (Week 7)
SY 2024-2025

Development Team

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MATHEMATICS / QUARTER 3 / GRADE 4

I. CURRICULUM CONTENT, STANDARDS, AND LESSON COMPETENCIES	
A. Content Standards	The learners should have knowledge and understanding of the subtraction of dissimilar fractions.
B. Performance Standards	By the end of the quarter, the learners are able to represent, compare, and order dissimilar fractions. (NA)
C. Learning Competencies and Objectives	1. Subtract dissimilar fractions: 1.1. two proper fractions, 1.2. two mixed numbers, 1.3. a mixed number and a proper fraction, 1.4. a whole number and a proper fraction, and 1.5. a whole number and a mixed number.
D. Content	Subtraction of Dissimilar Fractions
E. Integration	

II. LEARNING RESOURCES
The Math Learning Center. (n.d.). Fraction by The Math Learning Center. https://apps.mathlearningcenter.org/fractions/ Toy Theater. 2014. Fraction Bars. https://toytheater.com/fraction-bars/

III. TEACHING AND LEARNING PROCEDURE		NOTES TO TEACHERS
A. Activating Prior Knowledge	**DAY 1** **1. Short Review** Activity 1. (Drill) *Similar Fraction Facts.* Using flashcards, let learners recall how to subtract similar fractions (two proper fractions, two mixed numbers, a mixed number and a proper fraction, a whole number and a proper fraction, and a whole number and a mixed number).	Activity 1 is intended to automate the procedures for subtracting similar fractions. ***Important Note.*** It is advisable to have examples of subtracting similar fractions that will not lead to improper fractions. The

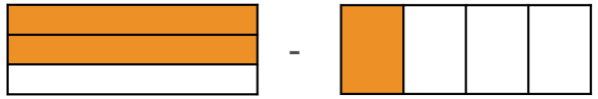
	Sample Activity (Individual) 1. $\frac{4}{5}-\frac{2}{5}$ 2. $\frac{7}{10}-\frac{3}{10}$ 3. $\frac{7}{8}-\frac{5}{8}$ 4. $1-\frac{7}{12}$ 5. $1-\frac{3}{5}$ **DAY 2** Activity 2 (Drill) *Sample Activity (Individual).* Use flashcards to drill learners on converting improper fractions to mixed numbers and vice versa. Instructions. Find the missing number to complete the pairs of equivalent fractions. 1. $2=\frac{?}{5}$ 2. $\frac{13}{5}=?\frac{?}{5}$ 3. $\frac{8}{3}=2\frac{?}{3}$ **2. Feedback** If learners have difficulty recalling the subtraction of similar fractions and converting improper fractions to mixed numbers and vice versa, illustrate through the model and then move forward to the process to build procedural fluency.	intention is to automate the procedure. Make deliberate examples in the flashcards. Activity 2 is intended to make learners commit to their memory of improper fractions and mixed number facts. *Add more items in Activity 2.
B. Establishing Lesson Purpose	**DAY 1** **1. Lesson Purpose** Activity 3. Let learners recall how to compare dissimilar fractions. *Sample Activity (Pair Activity)* Instructions. Let learners arrange the following dissimilar fractions in descending order. After arranging, let them get their differences. Let them illustrate through fraction strips/bars how were they able to get the differences. 1. $\frac{2}{3},\frac{3}{5},\frac{9}{15}$ _____, _____, _____ Difference: _____ _____ Model:	The intention of Activity 3 is to recall dissimilar fractions and by comparing, let learners get their differences via modeling. Include in this activity the following: 1.1. two proper fractions, 1.2. two mixed numbers, and 1.3. a mixed number and a proper fraction. *Add more items so learners build confidence in subtracting dissimilar fractions.

	DAY 2 Activity 4. Let learners recall how to compare dissimilar fractions. *Sample Activity (Pair Activity)* Instructions. Let learners arrange the following dissimilar fractions in descending order. After arranging, let them get their differences. Let them illustrate through fraction strips/bars how were they able to get the differences. 1. $1\frac{2}{3}$, 2, $\frac{12}{15}$ _____, _____, _____ Difference: _____ _____ Model: **2. Unlocking Content Area Vocabulary**	Same with the intention of Activity 3, but in this activity, include the following: 1.4. a whole number a proper fraction, and 1.5. a whole number and a mixed number. *Add more items so learners build confidence in subtracting dissimilar fractions. No content area vocabulary to add but, if necessary, let learners recall the concept of LCD (least common denominator)
C. Developing and Deepening Understanding	**DAY 3** **SUB-TOPIC: Subtracting Dissimilar Fractions** **1. Explicitation** After doing Activities 1 and 3, let learners further build on subtracting dissimilar fractions using the concepts of equivalent fractions and similar fractions. **2. Worked Example** Example 1. What is the difference between $\frac{2}{3}$ and $\frac{1}{4}$? Solution: **Using Modeling**	It is advisable to use the previously worked examples in modeling to be able to present the concept and later the procedures. ***Note.*** Help learners be familiar with the procedure by modeling how to "Think Aloud". Read the steps and let them repeat. *Model how to cognitively encode the*

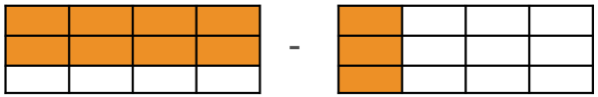
Equation Mat

Subtract: $\frac{2}{3} - \frac{1}{4}$

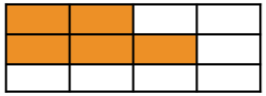
Model:



Equivalent Fractions



Difference



Answer: $\frac{5}{12}$

"I DO"

How to subtract dissimilar fractions?

Subtract: $\frac{2}{3} - \frac{1}{4}$

Solution:

Step 1. Determine LCD of the given fractions.

LCD: 12

Step 2. Use the LCD to make the given fractions similar.

$\frac{2}{3} = \frac{?}{12}$ $\quad\quad$ $\frac{1}{4} = \frac{?}{12}$

$\frac{2}{3} = \frac{8}{12}$ $\quad\quad$ $\frac{1}{4} = \frac{3}{12}$

Step 3. Subtract the similar fractions.

$$\frac{2}{3} - \frac{1}{4} = \frac{8}{12} - \frac{3}{12}$$

$$= \frac{8-3}{12}$$

Answer: $\frac{5}{12}$

procedure in their working memory.

Example.

Step 1 Find LCD.

Step 2 Make fractions similar.

Step 3 Add.

Important Note. Many teachers teach addition/subtraction of dissimilar fractions in too mechanical way. For example, after identifying the LCD, teachers will proceed with by doing this procedure.

Say, $\frac{1}{2} - \frac{1}{3}$

LCD: 6

$\frac{1}{2} - \frac{1}{3} = \frac{? - ?}{6}$

Then will introduce the procedure like 6 divided by 2 times 1, thus getting the new numerator 3. Proceeding with the second fraction, 6 divided by 3 times 1, getting the new numerator 2.

These pedagogical strategies do not help students to connect the concept of equivalent fractions in adding/subtracting dissimilar fractions.

	"WE DO". Subtract $\frac{2}{3}$ from $\frac{3}{4}$ **"YOU DO".** Subtract: $\frac{4}{5}$ - $\frac{3}{10}$ Example 2. Subtract $1\frac{3}{4}$ from $3\frac{1}{2}$ **"I DO"** Solution: Number Sentence: $3\frac{1}{2}$ - $1\frac{3}{4}$ Step 1. Convert mixed numbers to improper fractions: $3\frac{1}{2} = \frac{7}{2}$; $1\frac{3}{4} = \frac{7}{4}$ Step 2. Determine LCD of the given fractions: 4 Step 3. Use the LCD to make the given fractions similar: $\frac{7}{2} = \frac{?}{4}$ $\quad$ $\frac{7}{4} = \frac{?}{4}$ $\frac{7}{2} = \frac{14}{4}$ $\quad$ $\frac{7}{4} = \frac{7}{4}$ Step 4. Subtract the similar fractions: $3\frac{1}{2}$ - $1\frac{3}{4} = \frac{14}{4}$ - $\frac{7}{4}$ $= \frac{14-7}{4}$ Answer: $\frac{7}{4}$ or $1\frac{3}{4}$ **"WE DO".** Find the difference between $2\frac{1}{4}$ and $1\frac{3}{5}$ **"YOU DO".** Subtract: $3\frac{1}{3}$ - $1\frac{1}{12}$ Example 3. Subtract: $4\frac{2}{3}$ - $\frac{2}{5}$ **"WE DO"** Solution: Number Sentence: $4\frac{2}{3}$ - $\frac{2}{5}$ Step 1. Convert mixed numbers to improper fractions: $4\frac{2}{3} = \frac{14}{3}$ Step 2. Determine LCD of the given fractions: 15 Step 3. Use the LCD to make the given fractions similar: $\frac{14}{3} = \frac{?}{15}$ $\quad$ $\frac{2}{5} = \frac{?}{15}$ $\frac{14}{3} = \frac{70}{15}$ $\quad$ $\frac{2}{5} = \frac{6}{15}$	Let them individually transform the fractions into similar fractions using the LCD and equivalent fractions concept. You may use also the pedagogical strategy **"I Do - We Do - You Do"**. The teacher models how to subtract dissimilar fractions. Next, both the teacher and learners do the modeling. Lastly, learners do the modeling with little to no guidance from the teacher on a gradual basis. *The "We Do" part is intended to gradually teach learners different subtraction strategies or methods using the formal mathematical language (e.g. difference between, subtracted from, etc.) Notice that for Example 2, the fraction part of the subtrahend is greater than the fraction part of the minuend. Instead of using the process of "regrouping and borrowing" from the whole number of the mixed number to be added to the fraction part of the minuend, it is encouraged to "rewrite" the mixed numbers into improper fractions and then transform again to equivalent fractions.

	Step 4. Subtract the similar fractions: $4\frac{2}{3} - \frac{2}{5} = \frac{70}{15} - \frac{6}{15}$ $= \frac{70-6}{15}$ Answer: $\frac{64}{15}$ or $4\frac{4}{15}$ Example 4. What is the difference between 2 and $\frac{5}{7}$ Solution: Number Sentence: $2 - \frac{5}{7}$ Step 1. Determine LCD of the given fractions: 7 Step 2. Use the LCD to make the given fractions similar: $2 = \frac{?}{7}$ $\quad \frac{5}{7} = \frac{?}{7}$ $2 = \frac{14}{7}$ $\quad \frac{5}{7} = \frac{5}{7}$ Step 3. Subtract the similar fractions: $2 - \frac{5}{7} = \frac{14}{7} - \frac{5}{7}$ $= \frac{14-5}{7}$ Answer: $\frac{9}{7}$ or $1\frac{2}{7}$ Example 5. Subtract $2\frac{2}{3}$ from 5 Solution: Number Sentence: $5 - 2\frac{2}{3}$ Step 1. Convert mixed numbers to improper fractions: $2\frac{2}{3} = \frac{8}{3}$ Step 2. Determine LCD of the given fractions: 3 Step 3. Use the LCD to make the given fractions similar: $5 = \frac{?}{3}$ $\quad \frac{8}{3} = \frac{?}{3}$ $5 = \frac{15}{3}$ $\quad \frac{8}{3} = \frac{8}{3}$ Step 4. Subtract the similar fractions: $5 - 2\frac{2}{3} = \frac{15}{3} - \frac{8}{3}$ $= \frac{15-8}{3}$ Answer: $\frac{7}{3}$ or $2\frac{1}{3}$	To be able to commit to the memory of learners on how to rewrite mixed numbers to improper fractions, you may ask them the following (see example 2), "How many $\frac{1}{2}$s are there in $3\frac{1}{2}$? How many $\frac{1}{4}$s are there in $1\frac{3}{4}$?" Note. After several examples, you may switch to **"We Do - You Do"** approach and eventually to **"You Do"** approach. *Add more worked examples.

	DAY 4 **3. Lesson Activity** (Pair Activity). Let learners be more familiar with how to subtract dissimilar fractions by giving them more practice exercises. *Sample Activity.* Instructions. Determine the difference of the following. *Reduce the difference in its simplest form if possible.* 1. $\frac{11}{12}-\frac{1}{3}$ 2. $\frac{3}{5}-\frac{1}{2}$ 3. $4\frac{3}{4}-3\frac{2}{3}$ 4. $5\frac{3}{6}-\frac{2}{3}$ 5. $3-2\frac{3}{5}$	**Answer Key:** 1. $\frac{7}{12}$ 2. $\frac{1}{10}$ 3. $1\frac{1}{12}$ 4. $4\frac{5}{6}$ 5. $\frac{2}{5}$
D. Making Generalizations	**DAY 3** **1. Learners' Takeaways** Give this activity to test the conceptual and procedural understanding of learners in adding dissimilar fractions. ***Fill Me Up!*** Fill up the following to make the procedures correct. 1. $\frac{7}{6}$ - $\frac{3}{4}$ Solution: LCD: ____ $\frac{7}{6}$ - $\frac{3}{4}$ = $\frac{14}{12}$ - $\frac{?}{12}$ = $\frac{14-?}{12}$ = $\frac{5}{?}$ 2. $2\frac{3}{7}$ - $1\frac{3}{5}$ Solution: LCD: ____ $2\frac{3}{7}$ + $1\frac{3}{5}$ = $\frac{17}{7}-\frac{?}{5}$ = $\frac{?}{35}-\frac{56}{35}$ = $\frac{85-56}{?}$ = $\frac{?}{35}$ **2. Reflection on Learning (Homework)** Regine subtracted $2\frac{3}{10}$ from $3\frac{4}{5}$. She got a difference of $1\frac{1}{2}$. Is she correct? Show that Regine's answer is correct.	Homework is optional.

<table>
<tr><th colspan="4">IV. EVALUATING LEARNING: FORMATIVE ASSESSMENT AND TEACHER'S REFLECTION</th><th>NOTES TO TEACHERS</th></tr>
<tr><td>A. Evaluating Learning</td><td colspan="3">DAY 4
1. Formative Assessment
Worksheet: Activity 1: Riddle Time! (See attached copy of the worksheet)
Total points: 15 points
Solution part: 2 points each
Rubric.<table><tr><td>0</td><td>Did not attempt to solve the problem.</td></tr><tr><td>1</td><td>With solution but has incorrect procedures still arrived at the correct answer; No solution provided but arrived at the correct answer</td></tr><tr><td>2</td><td>Provided a complete solution, no incorrect procedures, and arrived at the correct answer.</td></tr></table>Riddle part: 3 points
Rubric.<table><tr><td>0</td><td>Did not attempt to decode the riddle.</td></tr><tr><td>1</td><td>Able to decode the riddle but the solutions provided were incorrect. Guessed some of the items.</td></tr><tr><td>3</td><td>Decoded the riddle properly according to the correct solution provided.</td></tr></table>2. Homework (Optional)</td><td rowspan="2">Answer Key:
1. $\frac{2}{9}$
2. $\frac{7}{15}$
3. $6\frac{1}{4}$
4. $5\frac{1}{10}$
5. $1\frac{5}{8}$
6. $2\frac{1}{6}$

Riddle: A TOWEL</td></tr>
<tr><td>B. Teacher's Remarks</td><td>Note observations on any of the following areas:</td><td>Effective Practices</td><td>Problems Encountered</td></tr>
<tr><td></td><td>strategies explored</td><td></td><td></td><td rowspan="2">The teacher may take note of some observations related to the effective practices and problems encountered after utilizing the different strategies, materials used, learner engagement, and other related stuff.</td></tr>
<tr><td></td><td>materials used</td><td></td><td></td></tr>
</table>

	learner engagement/ interaction			Teachers may also suggest ways to improve the different activities explored/lesson exemplar.
	others			
C. Teacher's Reflection	*Reflection guide or prompt can be on:* • *principles behind the teaching* *What principles and beliefs informed my lesson?* *Why did I teach the lesson the way I did?* • *students* *What roles did my students play in my lesson?* *What did my students learn? How did they learn?* • *ways forward* *What could I have done differently?* *What can I explore in the next lesson?*			Teacher's reflection in every lesson conducted/facilitated is essential and necessary to improve practice. You may also consider this as an input for the LAC/Collab sessions.