Grade 6: Mathematics

## Alberta Math Education Curriculum Component: NUMBER Unit

Chapter 7: Fractions

| General Outcome: | *Students will able to:* |
|---|---|
| ➔ Develop number sense. | • model and interpret fractions equal to 1 or greater than 1<br>• represent fractions greater than 1 as mixed numbers or improper fractions<br>• compare and order fractions and mixed numbers<br>• solve problems using logical reasoning |

**Alberta Math Education Specific Concept (learning outcome):** 4.

**Classroom assessment is generally divided into three types: assessment *for* learning (Diagnostic Assessment: D), assessment *of* learning (Summative Assessment: S), assessment *as* learning (F).**

➔For lesson **extra practice**, please visit:
http://www.nelson.com/mathfocus/grade6/student/tryout.html

**Lesson Outline:**

| Lesson | Textbook Lesson Title | Learning Goals | Task ** | Done |
|---|---|---|---|---|
| 1 | 7.1- Modelling Fractions | Activate knowledge about fractions.<br>Model fractions equal to 1 or greater than 1. | Scaffolding for Getting Started (**D**)<br>□ HW: Workbook (pg. 50) **(F)** | |
| 2 | 7.2- Fractions Greater Than 1 | Compare numerators and denominators to interpret fractions. | □ HW: Workbook (pg. 51) **(F)**<br>➔ On line: Extra Practice | |
| 3 | 7.3- Representing Improper Fractions as Mixed Numbers | Relate improper fractions to mixed numbers. | □ HW: Workbook (pg. 52) **(F)**<br>➔ On line: Extra Practice | |
| 4 | **Mid-Chapter Review** | Preparation for the quiz:<br><br>Quiz Date: __/__/__ **(mm/dd/yyyy)** | □ Textbook:<br>Pg 221 # 1-8 (DOSO on letter) **(F)** | |
| 5 | 7.5- Representing Mixed Numbers as Improper Fractions | Express a mixed number as an equivalent improper fraction. | □ HW: Workbook (pg. 54) **(F)**<br>➔ On line: Extra Practice | |
| 6 | 7.6- Comparing Fractions and Mixed Numbers | Compare improper fractions and mixed numbers using models and diagrams. | □ HW: Workbook (pg. 55) **(F)**<br>➔ On line: Extra Practice | |
| 7 | **Chapter Review** | Preparation for the test:<br><br>Test Date: __/__/__ **(mm/dd/yyyy)** | □ Textbook: **(F)**<br>➔ Pg. 235-236 (Q1 to Q14: DOSO on letter)<br>➔ Workbook (pg. 57)<br>□ Handout: **(S)**<br>➔ Chapter 7: Journal Questions<br>➔ **Unit Project (Textbook Pg. 237): Making Party Sandwiches**<br>➔ Chapter 7: Self-Assessment: Lesson Goals<br>➔ Review of Essential Skills: Chapter 7 | |

Here are some of the *Key Words* that are being used in this chapter:

| | |
|---|---|
| *improper fraction | *mixed number |

**** If the class work is not completed during class time, must be done for homework.**

I have read and went over this "*Number -Unit 1 Plan (Chapter 7)*" with my child. JazakAllahu khayran

_____ Parent/Guardian name (print)

_____ Parent/Guardian signature

__/__/____ **(dd/mm/yyyy)**

Address: 14525 127 ST, Edmonton, AB T6V 0B3 Phone: (780) 454-4573

**RE: Chapter 7: Fractions Information Letter**

As-salaamu Alaikum Wa Rahmatu Allahi Wa Barakaatuhu, ("Peace be unto you and so may the mercy of Allah and His blessings"),

Dear Respected Parents and Guardians of Grade 6:

Over the next two weeks, your child will be learning how to interpret mixed numbers and improper fractions. Your child will learn how to represent a number as both a mixed number and an improper fraction. Students will also learn how to compare and order mixed numbers and improper fractions. They will apply their understanding to solve problems involving these numbers.

To reinforce the concepts your child is learning at school, you and your child can work on some at-home activities such as these:

- Have your child write down any mixed numbers encountered outside of school. Your child should try to explain what the number means and write it in the other form. Later, she or he should revisit the list and compare the fractions and order them from least to greatest.
- Have your child identify situations that involve improper fractions and mixed numbers at home. Examples may include the amount of ingredients in recipes, the amount of time it takes to complete an activity, or measurements for household projects.
- Have your child use ice cube trays to show fractions and mixed numbers. For example, if 1 ice cube tray has 12 wells for ice cubes, then each well is of the tray. Describe 1 whole tray as. Fill whole trays and parts of trays with water or different kinds of juices and use mixed numbers and improper fractions to describe the trays. For example, if you have two trays and fill 18 wells with apple juice, you have filled or 1 trays. For a special treat, put the trays in the freezer to make small ice pops.

You may want to visit the Nelson website at
**http://www.mathk8.nelson.com/math6/studentcentre/studtryout.html**
for more suggestions to help your child learn mathematics and develop a positive attitude toward learning mathematics. As well, you can check the Nelson website for links to other websites that provide online tutorials, math problems, brainteasers, and challenges.

Sincerely,

Mustafizur Rahman, **ATA, OPC, OCT**
**Ed.D** (candidate), **MEd, BEd, BSc**
Grade 6 Math

Name: _____ Date: _____

# Scaffolding for Getting Started

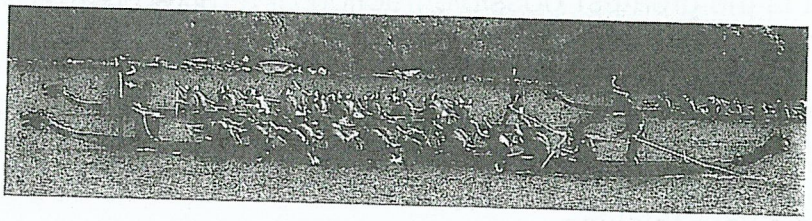


STUDENT BOOK PAGES 208–209

## Dragon Boat Teams

To enter the Regina Dragon Boat Festival, a team must include

- one drummer
- one steerer
- between 16 and 20 paddlers



In a mixed team, there must be at least 8 men and 8 women paddlers.
Kylie and Daniel manage mixed teams of 20.
Kylie's team has more women than Daniel's team.

**? What fractions can you use to describe the members of the dragon boat teams?**

**A.** What fractions can you use to describe the possible numbers of women on a mixed team of 20?

There must be at least 8 women. What fraction describes the women on a team with 8 women? _____

There must be at least 8 men. If there are 20 people on the team and 8 of them are men, how many are women? _____

What fraction describes the women on this team? _____

Write fractions for other possible numbers of women that could be on a team of 20.

_____

**B.** What is the least possible fraction of a mixed team of 20 that are women?

Look at the fractions you wrote in Part A. Which fraction is the least? _____

Explain your thinking.

_____

_____



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## Scaffolding for Getting Started 

STUDENT BOOK PAGES 208–209

**C.** What is the greatest possible fraction of a mixed team of 20 that are women?

Look at the fractions you wrote in Part A. Which fraction is the greatest? _____

Explain your thinking.

_____

_____

**D.** What is the greatest possible number of women on Daniel's team?

What is the greatest number of women that can be on a team? _____

Kylie's team has more women than Daniel's team. What is the greatest number of women that can be on Daniel's team? _____

Explain how you know.

_____

**E.** What is the least possible number of men on Daniel's team?

The team with the greatest possible number of women is also the team with the least possible number of men.

What is the greatest possible number of women on Daniel's team? _____

What is the least possible number of men on Daniel's team? _____

**F.** How can the fraction $\frac{1}{20}$ be used to describe a part of Kylie's team or Daniel's team?

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# Scaffolding for Getting Started



STUDENT BOOK PAGES 208–209

**G.** Make up your own team using the rules for the Regina Dragon Boat Festival. Describe your team. Think about the number of drummers, steerers, paddlers, and so on. Make sure you follow the Regina Dragon Boat Festival rules.

Write three fractions to describe your team.
What does each fraction represent?



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# Fraction Strips with Labels

## Lesson 4: Exploring Improper Fractions and Mixed Numbers

STUDENT BOOK PAGE 219

| 1 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $\frac{1}{2}$ | | | | | $\frac{1}{2}$ | | | | |
| $\frac{1}{3}$ | | | $\frac{1}{3}$ | | | | $\frac{1}{3}$ | | |
| $\frac{1}{4}$ | | | | $\frac{1}{4}$ | | | | $\frac{1}{4}$ | |
| $\frac{1}{5}$ | | | | | $\frac{1}{5}$ | | | | |
| $\frac{1}{6}$ | | | | | | $\frac{1}{6}$ | | | |
| $\frac{1}{7}$ | | | | | | | $\frac{1}{7}$ | | |
| $\frac{1}{8}$ | | | | | | | | $\frac{1}{8}$ | |
| $\frac{1}{9}$ | | | | | | | | | $\frac{1}{9}$ |
| $\frac{1}{10}$ | | | | | | | | | |

| 1 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $\frac{1}{2}$ | | | | | $\frac{1}{2}$ | | | | |
| $\frac{1}{3}$ | | | $\frac{1}{3}$ | | | | $\frac{1}{3}$ | | |
| $\frac{1}{4}$ | | | | $\frac{1}{4}$ | | | | $\frac{1}{4}$ | |
| $\frac{1}{5}$ | | | | | $\frac{1}{5}$ | | | | |
| $\frac{1}{6}$ | | | | | | $\frac{1}{6}$ | | | |
| $\frac{1}{7}$ | | | | | | | $\frac{1}{7}$ | | |
| $\frac{1}{8}$ | | | | | | | | $\frac{1}{8}$ | |
| $\frac{1}{9}$ | | | | | | | | | $\frac{1}{9}$ |
| $\frac{1}{10}$ | | | | | | | | | |



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# Mid-Chapter Review—Frequently Asked Questions

STUDENT BOOK PAGE 220

**Q:** Why is an improper fraction greater than 1?

**A:** _____

_____

_____

_____

_____

**Q:** How can you write the mixed number that is equivalent to an improper fraction?

**A:** _____

_____

_____

_____

_____



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ıe: _____ Date: _____

# apter Review—Frequently Asked Questions

ENT BOOK PAGE 234

How can you express a mixed number as an improper fraction?

_____

_____

_____

_____

_____

What strategies can you use to put fractions and mixed numbers in order?

_____

_____

_____

_____

_____

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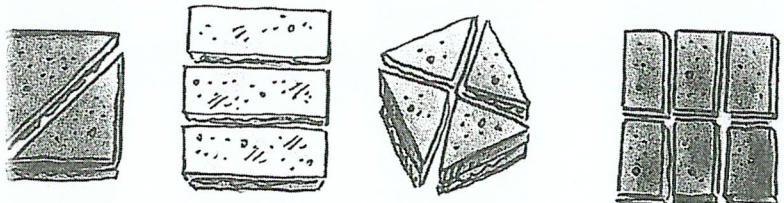
## Chapter 7 Task Page 1

## Making Party Sandwiches

ST NT BOOK PAGE 237

Félix and Shaun cut some sandwiches into pieces. They put 82 pieces on a tray. There were more halves than thirds and more fourths than sixths.



halves thirds fourths sixths

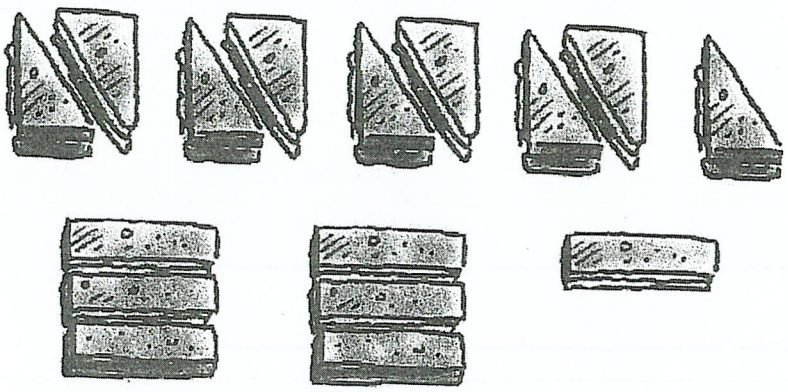
**Task Checklist**

- ❑ Did you include all four types of sandwich pieces?
- ❑ Did you use models appropriately?
- ❑ Did you explain your thinking clearly?

**What fractions could you use to describe the 82 pieces on the tray?**

**Read the Task Checklist above before you begin.**

A. How does this picture of 16 pieces show $4\frac{1}{2}$ sandwiches and $\frac{7}{8}$ sandwiches?



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## Chapter 7 Task Page 2

**B.** Sketch each number of sandwiches: $9\frac{1}{2}$, $1\frac{2}{3}$, $2\frac{3}{4}$, and $4\frac{1}{6}$.

**C.** Write four improper fractions to describe Félix's and Shaun's 82 pieces. Write the mixed numbers for them.

_____

_____

**D.** Create and solve a similar sandwich problem that involves mixed numbers and improper fractions. Use pictures to show your solution.

_____

_____

_____



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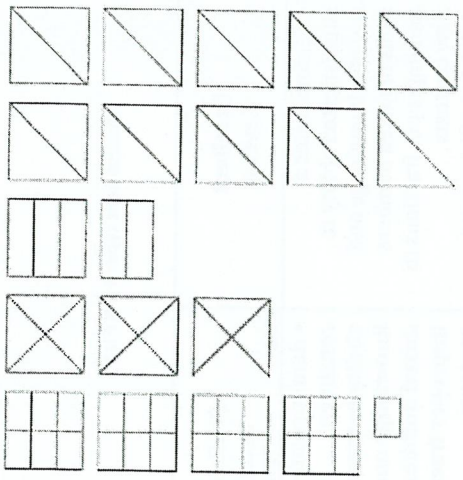
# Chapter 7: Fractions

## Chapter Task: Making Party Sandwiches

**B.**

For example,



Grade 6: Mathematics

# Chapter 7: Making Party Sandwiches

Date: __/__/____(dd/mm/yyyy)

Term: ¤ 1 ¤ 2

Name: _____ Assessment type: ¤ D ¤ F ¤ S Overall: Mark//Level:___//__; Class Average:___ Parent Signature:_____

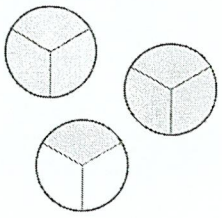
| Criteria \ Level | **Excellent** Level 4 | **Proficient** Level 3 79% 72% 65% | **Adequate** Level 2 | **Limited*** Level 1 | **Insufficient/ Blank*** |
|---|---|---|---|---|---|
| **Prompts A to D**<br>**N4.**<br>Relate improper fractions to mixed numbers.<br>[CN, ME, R, V]<br>(__/4) | • demonstrates a sophisticated ability to transfer knowledge and skills of mixed numbers and improper fractions to new contexts<br>• chooses efficient and effective strategies when applying knowledge of improper fractions and mixed numbers<br>• uses visual Representations insightfully to demonstrate a thorough understanding of mixed numbers and improper fractions | **• demonstrates a consistent ability to transfer knowledge and skills of mixed numbers and improper fractions to new contexts**<br>**• chooses workable and reasonable strategies when applying knowledge of improper fractions and mixed numbers**<br>**• uses visual representations meaningfully to demonstrate a reasonable understanding of mixed numbers and improper fractions** | • demonstrates some ability to transfer knowledge and skills of mixed numbers and improper fractions to new contexts<br>• chooses partially appropriate and workable strategies when applying knowledge of improper fractions and mixed numbers<br>• uses visual representations simply to demonstrate a basic understanding of mixed numbers and improper fractions | • demonstrates a limited ability to transfer knowledge and skills of mixed numbers and improper fractions to new contexts<br>• chooses inappropriate and/or unworkable strategies when applying knowledge of improper fractions and mixed numbers<br>• uses visual representations poorly to foster/demonstrate an incomplete understanding of mixed numbers and improper fractions | No score is awarded because there is insufficient evidence of student performance based on the requirements of the assessment task. |
| **Days Late** (__/1) | 0 | 1 | 2 | 3++ | --Not Hand In |

## Teacher's Comments – Area for Growth and Action Plans (if below "level 2"):

□ please use the given time in the classroom wisely by *asking questions to further clarify the assignment or focus on the task at hand*. Also, you need to follow the sample work shown in the class (*if applicable*) as a guideline to achieve *level 3* in this rubric.

**Unit: Number**
Chapter 7: Fractions

## Journal Questions (Hint: *Make sure to show all your work.*):

1. 

Which improper fraction does the diagram at the left show?

A. $\frac{3}{2}$ B. $\frac{3}{7}$ C. $\frac{2}{3}$ D. $\frac{7}{3}$

2. There are $2\frac{3}{12}$ cartons of eggs in a refrigerator. Which fraction describes the number of cartons?

A. $\frac{27}{12}$ B. $\frac{23}{12}$ C. $\frac{5}{12}$ D. $\frac{12}{3}$

3. How would you write $\frac{16}{3}$ as a mixed number?

A. $3\frac{1}{6}$ B. $2\frac{2}{3}$ C. $1\frac{6}{3}$ D. $5\frac{1}{3}$

4. Which numbers are in order from least to greatest?

A. $\frac{5}{3}, 1\frac{1}{2}, \frac{3}{5}$ C. $1\frac{1}{2}, \frac{4}{3}, 2\frac{3}{8}$

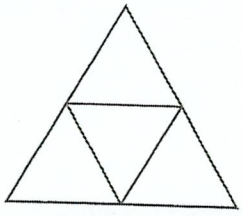
B. $\frac{7}{8}, \frac{12}{5}, 2\frac{9}{10}$ D. $\frac{10}{4}, 1\frac{1}{6}, \frac{3}{5}$

Name: _____ Date: _____

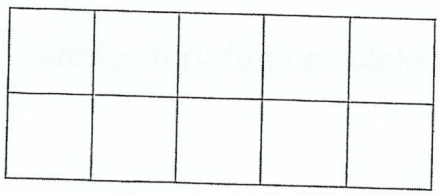
# Chapter 7: Fractions

1. Colour each shape to match the fraction shown.

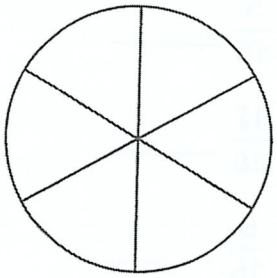
a) $\frac{1}{4}$



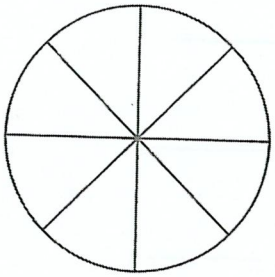
c) $\frac{3}{5}$



b) $\frac{2}{3}$

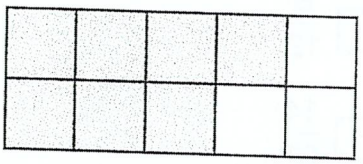


d) $\frac{5}{8}$



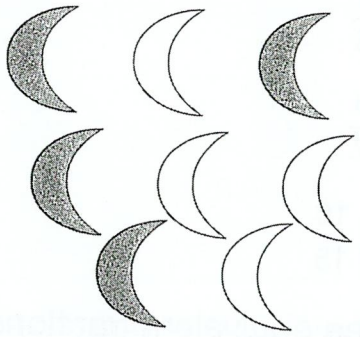
2. Write a fraction for the shaded part of each picture.

a)



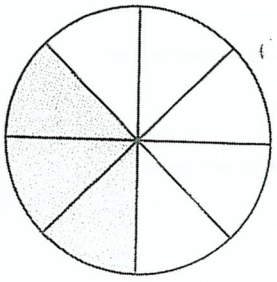
_____

c)



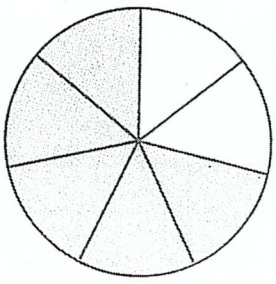
_____

b)



_____

d)



_____

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3. a) Make a sketch to show $\frac{4}{5}$.

b) Make a sketch to show $\frac{5}{12}$.

4. Is each pair of fractions equivalent? Answer *yes* or *no*.

a) $\frac{2}{3}$ and $\frac{4}{5}$ _____

b) $\frac{3}{8}$ and $\frac{9}{24}$ _____

c) $\frac{8}{9}$ and $\frac{8}{10}$ _____

d) $\frac{8}{10}$ and $\frac{5}{10}$ _____

e) $\frac{14}{21}$ and $\frac{12}{18}$ _____

f) $\frac{12}{15}$ and $\frac{9}{15}$ _____

5. Fill in the box with $>$, $<$, or $=$ to make each statement true.

a) $\frac{4}{5} \square \frac{2}{3}$

b) $\frac{3}{7} \square \frac{4}{7}$

c) $\frac{8}{12} \square \frac{10}{15}$

d) $\frac{8}{10} \square \frac{8}{12}$

e) $\frac{21}{28} \square \frac{14}{21}$

f) $\frac{12}{20} \square \frac{9}{15}$

6. Write three equivalent fractions for each given fraction.

a) $\frac{1}{2}$ _____

b) $\frac{1}{4}$ _____

c) $\frac{3}{4}$ _____

d) $\frac{3}{5}$ _____

e) $\frac{8}{10}$ _____

f) $\frac{4}{9}$ _____



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# Chapter 7 Self-Assessment: Lesson Goals

Place a check mark in the box that best describes your work.

| Lesson Goals | Yes, on my own | Yes, with help | Sometimes/ Not sure | Not yet |
|---|---|---|---|---|
| I can model fractions equal to 1 or greater than 1. | | | | |
| I can compare numerators and denominators to interpret fractions. | | | | |
| I can relate improper fractions to mixed numbers. | | | | |
| I can model improper fractions and mixed numbers. | | | | |
| I can express a mixed number as an equivalent improper fraction. | | | | |
| I can compare improper fractions and mixed numbers using models and diagrams. | | | | |
| I can use logical reasoning to solve mixed number problems and fraction problems. | | | | |

Choose one of your answers from above. Give your evidence.

My evidence for _____ is

_____

_____

_____

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