Content-based SIOP Lesson Plan
(Lesson Time: 60 minutes)

STANDARDS:

CMCS 1: Students develop number sense and use numbers and number relationships in problem-solving situations and communicate the reasoning used in solving these problems.

WIDA Language Standards 5th Grade Fluency: English Language Learners speak (repeat, paraphrase, connect, explain, integrate) to convey information and understanding, using a variety of sources, for academic and social purposes.

THEME: Mathematics

LESSON TOPIC: exploring fractions

OBJECTIVES:
Language *(SWBAT):*

1. Share and write down a personal story about a time when they had to split a whole of something
2. Listen to the teacher's introduction of vocabulary terms
3. Use Unifix cubes to make fractions as a whole class & explain why answers are correct to a partner
4. Use Unifix cubes to solve math problems in groups & explain answers to the class

Content *(SWBAT):*

1. Discuss the importance of fractions in real life
2. Solve basic fraction problems with Unifix cubes
3. Explain why their answers are correct to group members

LEARNING STRATEGIES:

- Share personal experiences and knowledge about sharing, dividing, etc.
- Discovery learning through brainstorming in small group work
- Modeling use of vocabulary and manipulatives
- Vocabulary word wall
- Hands-on learning with Unifix cube manipulatives
- Observing
- Making comparisons
- Problem-solving in small groups
- Presenting learned information to whole class

KEY VOCBULARY:

- fraction
- numerator
- denominator
- split

- division
- whole

MATERIALS:

- Blank pizza template drawing (SEE APPENDIX A)
- Fraction graphic organizers w/ vocab terms labeled (SEE APPENDIX B)
- Unifix cubes math manipulatives (SEE APPENDIX C)

Total Lesson Time: 60 minutes

(8 minutes) MOTIVATION:
(building background)

Read content and language objectives.

Tell personal story of having to share pizza with family. Ask what else students have had to share. (3 mins.)

Make the *real world connection* between sharing and dividing in math: Remind them they are dividing these things, just like we do in math class. Show them the pizza example. How can we split the pizza so that it is fair? This should be a review. *HOTQ:* What would the world be like if we couldn't use division? (5 mins.)

(15 minutes) PRESENTATION:
(objectives, comprehensible input, strategies, interaction, feedback)

Write a few common fractions on the board: ½, ⅔, ¾, ¼ Ask students if they have ever seen numbers written this way. Where? (measuring cups, math book, around the school, etc.) These numbers are called **fractions.** A fraction is a part of a **whole** thing. *turn to pizza problem again to clarify* (4 mins.)

Modeling: I am going to change how we have written our pizza problem to make it look like a fraction (write on board): I eat 1 piece of pizza (write 1 in numerator place). How many pieces were there in the pizza total? (write 8 in denominator place). Here is my fraction: 1/8. It tells me that out of the whole of 8, I have 1. (2 mins.)

Have class help model what happens to the fraction if I eat 3 pieces. (3 mins.)

Have class look at their fraction graphic organizers, using modeled problems to talk about the rest of the **math vocabulary terms**. Add to *word wall*. Use these terms from now on in the lesson for *repetition* and *practice*. (6 mins.)

(20 minutes) PRACTICE/APPLICATION:
(meaningful activities, interaction, strategies, practice/application, feedback)

Introduce how to use Unifix cubes: Go back to pizza problem, and model how to build the fraction

with the cubes. (5 mins.)

Distribute cubes. (3 mins.)
Have students make easier fractions first: ½, 2/3, ¾, ¼ Then get harder by increasing the denominator size: 5/10, 5/17, etc.
HOTQs: What do you notice about the denominator if we subtract/add cubes? What do you notice about the numerator? Check for understanding and accuracy by alternating individual *thumb up/down* and *think-pair-share* with a partner: How do you know your answer is correct? Tell your partner. (12 mins.)

(17 minutes) REVIEW/ASSESSMENT:

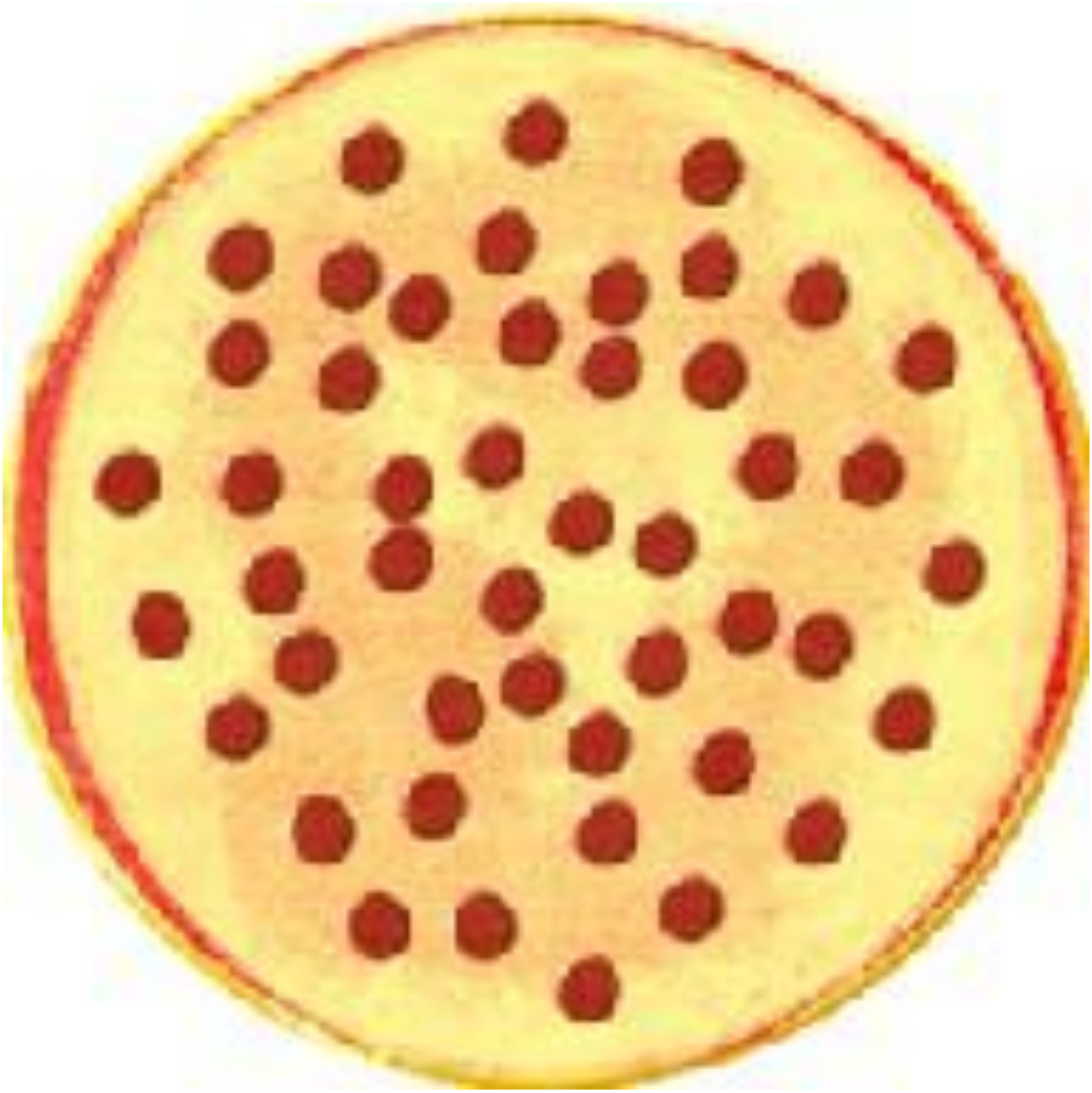
Group assessment: In small groups students must discuss and write down (7 mins.):

1. *HOTQ:* What is a fraction in your own words? Use the math vocabulary.
2. A given fraction- construct it using Unifix cubes and present why it is correct to the class

Groups present their answers using written notes and Unifix cubes. Rest of class gives *thumbs up/down* for agreement. (10 mins.)

EXTENSION: None. (Next lesson I would show them how the hands-on activity can be applied to solve the problems in the math book, but this connection should be taught first in a separate lesson, before assigning on-paper homework)

Appendix A
Blank Pizza Template



Appendix B
Fraction Graphic Organizer Worksheet

Name: _____

PARTS OF A FRACTION

1 (Numerator)
_____
6 (Denominator)

1

6

1

6

5

6

3

4

2

7

1

2

4

8

Appendix C
Example of Unifix Cubes Math Manipulatives