PLANNING THE LESSON/SUBTASK: Subtask Title: The Sub Problem

Date: April 20th 2015 Grade: 5 Timeframe (time available): Periods 2 and 3

Curriculum Area: Math Fractions Title of Unit (if appropriate): Fair Sharing

Context: *Where does this lesson fit into your (or your mentor teacher's) overall unit planning — introductory, middle, culminating? This will fit into the middle of my fraction unit which will allow the students to demonstrate their understanding of fractions and fractional relationships.*

Learning Expectations: *What skills, knowledge, attitudes/values do you expect your students to learn? Academic learning expectations are taken from the Ontario Curriculum documents. Please include integration possibilities. You can copy and paste the learning expectations into a document (without having to type them all out) by going to the Ontario curriculum at:* **http://www.edu.gov.on.ca/eng/curriculum/elementary/**

(Social skills can come from the Ontario Report Card.)

Academic:
- represent,compare,and order fractional amounts with like denominators,including proper and improper fractions and mixed numbers,using a variety of tools (e.g.,fraction circles,Cuisenaire rods, number lines) and using standard fractional notation;
-Big Ideas:
Size or amount if the whole matters
-With unit fractions, the greater the denominator the smaller the piece
-when naming the piece the whole matters

Social:
-Self Regulation
-Collaboration

Assessment: __x_Diagnostic _x__ Formative ___ Summative

What strategies will you assess the learning expectations?

- ❹ Observation
- ❹ Anecdotal Notes
- ☐ Work Samples
- ☐ Interview/Conference
- ☐ Checklist
- ❹ Learning Log/Journal
- ☐ Self-assessment
- ☐ Peer-assessment
- ☐ Personal Reflection
- ☐ Oral Reports
- ☐ Presentation/Performance
- ☐ Audio/Video/Technological Presentation
- ☐ Project
- ☐ Rubric
- ☐ Other

Indicators: *How will you know that your students have achieved the expectations? What will achievement look like?*
-Sharing of ideas through math congress and debrief of different strategies

Adaptations:

a) Accommodations: *What changes will you make in the learning environment to meet the individual needs of students?*

- ☐ Increase *time, space, amount*
- ☐ Decrease
- ❹ Change seating, groupings?
- ☐ Scribe
- ☐ Oral explanation
- ❹ Peer tutor/Partner
- ❹ Use manipulatives
- ☐ Include visuals, models, cueing, organizers
- ☐ Extend
- ☐ Other:

b) Modifications: *What modifications will you make in the lesson based on a change in the expectations for students on an I.E.P.? Peer support and one on one support. Breaking down of task into one part and into equal shares.*

Materials/Resources: *What will you need to prepare in advance?*

Teacher Resources	Human Resources	Student Materials	Equipment
Usage of talk moves Paper		Papers Fraction Kits	Link Cubes

Homework/ Reminders/Personal Notes:

(continued)

DELIVERING THE LESSON/SUBTASK (Using Lesson Design)

**Grouping: W = Whole class; S = Small group; I = Independent*

Timing	Grouping W	Grouping S	Grouping I		Materials/ Resources
Minds On	x			**Mental Set** *(hook)*: **10 -15 minutes:** At the carpet the teacher will elicit responses as to what is larger one third or one quarter. How can you prove this Turn and talk to your partner Share possible strategies e.g., making equivalencies, drawing models, looking at what is left, converting to decimals etc; Review group work expectations which includes proving, reasoning and reasoning. What does it sound like and look like (e.g., purposeful talk , modelling your thinking and opportunities for discourse) ***Introduce the Problem*** ***3 Groups went on a field trip*** ***The school ordered 14 subs but 17 students showed up.*** • ***One group had 3 kids sharing 4 subs equally.*** • ***A second group had 4 kid sharing 5 subs equally.*** • ***A third group had 8 students sharing 7 subs equally.*** ***Guiding Questions:*** ***1) Was the distribution fair...did each person in each group get the same amount...explain your reasoning*** ***2) How much of a sub did each person get assuming the pieces were cut equally*** *If the mental set is a **read-aloud,** it is important to include what you will do **before** (activating prior knowledge, preparing students for the lesson objective), **during** (reading focus, check for understanding), and **after** (extending the text, follow-up activity).*	Chart Paper Manipulatives Sub Story problem Group rule sheet and expectations
				Sharing the Purpose/Objectives *(in student language - What's in it for me? Why should I participate?):* ***What does reasoning representing fractions sound like and look like*** ***Understand the size of the whole matters and the name of the pieces matter depending on the whole*** ***Students to reveal these big ideas during the math congress...***	Group Rules
Action		x		**Body:** *(Input, Modeling, Check for Understanding, Guided Practice, Independent Practice in any order and/or repeated)* ***After sharing the story and to allow for sharing of ideas the students will then break into their math partner groups and discuss for 5 minutes possible strategies that they may use when solving the questions*** **Anticipation Organizer:**	-Posted sub problem After the math partner talk one group member will get their chart paper, link cube manipulatives if needed and markers and a

Strategy	Questions to Ask	Who and What	Order
Usage of landmark fractions e.g., halves	**What do you call one fifth of one half**		

Cut by # of people sharing partitioning	**What are the pieces called and what is the whole** **Is the total pieces cut are what each person gets of a sub...**		
Uses a common whole to compare fractions	**What is the whole and does your sub size change**		
Decimal Equivalents and division	**How are fractions related to decimals**		

Possible Solutions and Problems of Practice:

Congress: **-Debate between those students who think it's fair and those who do not**	**Think About:** **-Why certain fractions are larger than others** **-How part whole relationships helps us understand this concept**
Compare Results: **1) 3 for 4 = one half and one quarter share** **2) 4 for 5 = one half one fifth and one half share** **3) 7 for 8 = one half and one quarter and one eight share**	**Grapple with:** **- Common denominator** **- Parts of a whole and why the size whole matters** **- Equivalency** **-one half of one fifth** **- Solving who got the better deal or are they the same - prove it...**

copy of thre problem

Reflect/ Debrief	x	x		**Closure (sharing the learning in some way):** At the carpet share strategies that have been strategically selected during the action phase based on teacher observations, conversations and anticipation order of anticipation organizer above. ***Math Congress of strategies used and questions that students may have.*** **Strategies Gleaned**: Students struggled using the link cubes once the size of the pieces and whole changed. Refocus on **the context the size** of the sub does not change just the size of the pieces...it still stays a foot long for example. Most groups partitioned each piece based on the number of students but struggled labeling each piece accurately e.g. 1) One group selected used halving for the first question but then reverted to partitioning for the 2nd and 3rd questions and they will share their solution first. **3 subs 4 students Each Student (S1 = student 1 etc. receives three quarters of a sub)** **S1 S2 S3 S4** Sub 1 Sub 2 Sub 3 **Halving:** **3 subs 4 students Each Student (S1 = student 1 etc. receives half of a sub and a quarter of another for 3 quarters of a sub)** S1 S2 S3 S4 S1 S2 S3 S4 **Sub 1** **Sub 2** **Sub 3** 2) Another group named the pieces for their solution so they will share how they portioned the pieces out for questions 2 and 3. **Part 2:** **Which group got the better deal:** **Ideas and Strategies:** • **Usage of equivalent fractions (all out of 40 pieces to compare)** • **Decimal equivalents** • **Smaller pieces left at the end** • **Smaller pieces but more of them** **3 Quarters**  **4 Fifths**  **7 Eighths** 	At the carpet share strategies that have been strategically selected during the action phase based on teacher observations, conversations and anticipation order of anticipation organizer above

				Homework/ Reminders: **Next Steps:** **Work on questions 2 and three for finding alternate solutions using our fraction kits and halving more efficiently than just cutting by the number of students and working on what is one half of one fifth etc.....**	

Reflections: Include Successes, Challenges, Changes, Next steps.