

CI Task Information
Ordering Numbers – Rational Numbers

Task Title:	Ordering Numbers
Task Authors:	Larisa Velasco & Marcy Wood
Learning Goals	
Objectives (mathematical and/or pedagogical):	Use multiple strategies to compare fractions and decimals.
Common Core Content Standards Addressed:	<p>3.NF.A.3a Understand two fractions as equivalent if they are the same size.</p> <p>3.NF.A.3b Recognize and generate simple equivalent fractions.</p> <p>*3.NF.a.3d Compare two fractions with the same numerator or the same denominator by reasoning about their size.</p> <p>4.NF.A.1 Explain why a fraction a/b is equivalent to a fraction $(nxa)/(nxb)$ by using visual fraction models.</p> <p>*4.NF.A.2 Compare two fractions with different numerators and denominators.</p> <p>4.NF.C.7 Compare two decimals to hundredths by reasoning about their size.</p>
Common Core Standards for Mathematical Practice Addressed:	<p>MP6 Attend to precision</p> <p>MP3 Construct viable arguments and critique the reasoning of others</p> <p>MP1 Make sense of problems and persevere in solving them</p>
Set up Information	
Specific Norms	<ul style="list-style-type: none"> • Everyone records (make sure everyone is writing and understands all of the strategies) • Everyone contributes (only the person who “owns” the card can move it)
Specific Roles	I've done this with and without roles
Multiple abilities	<p>In order to succeed at this task, your group will need to do the following:</p> <ul style="list-style-type: none"> • Logical reasoning • Visual reasoning • Making sense of pictures • Making sense of fractions, decimals, and percents • Thinking creatively • Ordering based on quantity • Finding connections • Communicating ideas • Relying on others <p>None of us is good at all of these things, but we are each good at some of them. Together your group has the abilities you need to be successful.</p>

<i>Materials to prepare</i>	Copy and cut up number cards so that each group has one set Copy task cards – 2 for each group of 4 students
Task Enactment	
Launch	I use the multiple abilities orientation as my launch. I found that it helps to emphasize that everyone should thoroughly read the task card before they start.
Closure	<p>Mathematics</p> <ul style="list-style-type: none"> • Comparing to benchmark fractions ($\frac{1}{2}$ and whole) • Repeating decimals • Various interpretations of the visual representations ($\frac{9}{3}$, $\frac{9}{12}$, $\frac{3}{9}$, $\frac{3}{12}$, $\frac{12}{9}$, and $\frac{12}{3}$) • Any other interesting moves <p>Groupwork</p> <ul style="list-style-type: none"> • Add to sentence strips • “What did people in your group do that helped the group work on the mathematics?” • Refer to the participation quiz to highlight moves that were especially productive
Any specific directions?	As participants engage in the task, be sure they are only moving cards with their names on them. Also watch to see whether there are groups in which one person has all of the cards in front of him/herself. Has this person taken over the task?
Possible variations – how might this task be adjusted for different content or grade level?	This task can be easily adapted for different content and grade levels. For example, the number cards can be changed so they are all fractions or unit fractions. Also, I have made a variation with multiplication expressions, but this can also be easily changed to work with small quantities for kinder or for addition expressions. There is also a variation that has fractions represented using flags.

Suggested Roles (Adapted from Amy McDonald)

<p style="text-align: center;">Facilitator</p> <p>Gets the team off to quick start Makes sure everyone understands the information on the task card. Organizes the team so they can complete the task Keeps track of time Substitutes for absent roles "Who knows how to start?" "I can't get it yet... can someone help?" "We need to keep moving so we can..." "Let's find a way to work this out."</p>	<p style="text-align: center;">Resource Manager</p> <p>Makes sure the team is using all resources well, especially people. Calls the teacher over for a team question Collects supplies for the team Cares for and returns supplies Organizes clean up "I think we need more information here." "I'll call the teacher over" "We need to clean up. Can you... while I...?" "Do we all have the same question?"</p>
<p style="text-align: center;">Recorder / Reporter</p> <p>Gives update statements on team's progress Makes sure each member of the team records the data Organizes and introduces report "We need to keep moving so we can..." "I'll introduce the report, then..." "Did everyone get that in your notes?"</p>	<p style="text-align: center;">Reflection Leader</p> <p>Helps the group reflect on their work during the task and at the end. Asks questions about the group's activity: "What strategies have we used?" "What worked?" "What isn't working/didn't work?"</p>

Ordering Numbers Task Card

By Larisa Velasco and Marcy Wood

TASK: As a group, arrange the cards so the quantities they represent are ordered from least to greatest. Your group **must use a different strategy** each time you place or rearrange any cards. Find as many unique strategies as you can.

Directions:

1. Hand out all of the cards. Each person must have at least one.
2. Write your name ON THE FRONT of your card(s).
3. You may ONLY touch or move your card(s). No one else may touch or move your cards.

AFTER the cards are arranged:

As a group, choose any two cards. Using the strategies you developed as you ordered the number cards, make a list of all possible numbers between those two cards. Be sure everyone in your group can explain all of the variations.

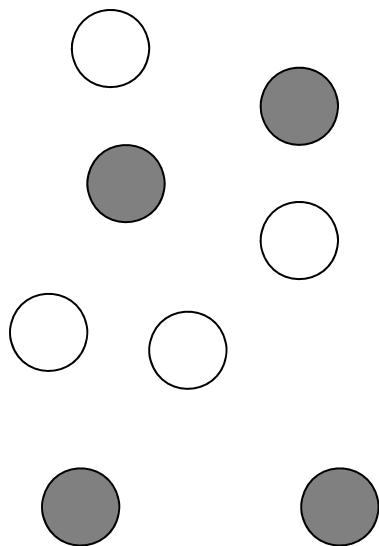
Individual Final Product:

Each person must describe *in writing* each different strategy for ordering the quantities on the number cards.

Norms:

*Explore until time is up.
Everyone takes turns.
Everyone records.*

$$\frac{4}{7}$$

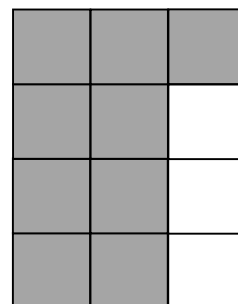


$$.666$$

$$\frac{5}{8}$$

$$.76$$

$$\frac{2}{3}$$



$$\frac{5}{9}$$