UNBC UNIVERSITY OF NORTHERN BRITISH COLUMBIA

EDUC 391 LESSON PLAN

Candidate's name: Joni Hesselgrave

Grade/Class/Subject:	Grade 6/7 Mathematics	School:	Lakeview Elementary
Date:	Wednesday, March 9, 2022	Allotted Time:	60 minutes
Topic/Title:	Comparing & Ordering Fractions and Decimals (Day 2)		

1. LESSON ORIENTATION

Key resources: Instructional Design Map

Briefly, describe purpose of lesson, and anything else to note about the context of lesson, students, or class, e.g. emergent learning needs being met at this time, elements of focus or emphasis, special occasions or school events.
The purpose of this lesson is to move students toward mastery of **comparing and ordering fractions and decimals**. I will review the processes involved in comparing and ordering fractions and decimals (especially those I noticed students struggling with yesterday) and then give students the remainder of the block to practice. This additional review and practice will better prepare students for tomorrow's low-stakes quiz. By the end of this short week, students will be able to compare and order fractions and decimals by first converting fractions to decimals on their calculators, and then proceed to compare and order using their place value knowledge.

2. CORE COMPETENCIES

Key resources: https://curriculum.gov.bc.ca/competencies

Core /Sub-Core Competencies *(check all that apply):*	*Describe briefly how you intend to embed Core Competencies in your lesson, or the role that they have in your lesson.*
☒ COMMUNICATION – Communicating ☐ COMMUNICATION – Collaborating ☐ THINKING – Creative Thinking ☒ THINKING – Critical Thinking ☒ THINKING – Reflective Thinking ☐ PERSONAL AND SOCIAL – Personal Awareness and Responsibility ☐ PERSONAL AND SOCIAL – Positive Personal and Cultural Identity ☐ PERSONAL AND SOCIAL – Social Awareness and Responsibility	**Communicating** encompasses the set of abilities that people use to impart and exchange information, experiences, and ideas; to explore the world around them; and to understand and effectively use communication forms, strategies, and technologies. • Students will communicate their understanding of mathematical vocabulary and language as they engage in mathematical discussions regarding fractions and decimals and the processes involved in comparing and ordering them. **Critical and Reflective Thinking** encompasses a set of abilities that people use to examine their own thinking and that of others. This involves making judgments based on reasoning, where students consider options, analyze options using specific criteria, and draw conclusions. People who think critically reflect on the information they receive through observation, experience, and other forms of communication to solve problems. • Students will think critically and reflectively, drawing upon information, reasoning, and specific criteria, to convert fractions to decimals.

	• Students will think critically and reflectively when comparing and ordering numbers in varied form (fractions of different kind as well as decimals). • Students will make judgments, based on information, reasoning, and specific criteria, to help determine if they need to convert fractions to decimals before comparing or ordering, or if they can use the Benchmark Strategy to decide (are they close to 0, ½, or 1).

3. INDIGENOUS WORLDVIEWS AND PERSPECTIVES

Key resources: First Peoples Principles of Learning (FPPL); Aboriginal Worldviews and Perspectives in the Classroom

FPPL to be included in this lesson *(check all that apply):*	*How will you embed Indigenous worldviews, perspectives, or FPPL in the lesson?*
☒ Learning ultimately supports the well-being of the self, the family, the community, the land, the spirits, and the ancestors. ☒ Learning is holistic, reflexive, reflective, experiential, and relational (focused on connectedness, on reciprocal relationships, and a sense of place). ☒ Learning involves recognizing the consequences of one's actions. ☐ Learning involves generational roles and responsibilities. ☐ Learning recognizes the role of Indigenous knowledge. ☐ Learning is embedded in memory, history, and story. ☒ Learning involves patience and time. ☐ Learning requires exploration of one's identity. ☐ Learning involves recognizing that some knowledge is sacred and only shared with permission and/or in certain situations.	Throughout my Mathematics lessons, I will encourage students to be patient and kind to themselves as they learn new concepts. Lessons will be delivered via open, non-judgmental group discussions, posited on positive teacher/student and student/student relationships and connections. Ideas and concepts will be learned experientially, through a mixture of explicit instruction, modelling, scaffolded support, and practice. Student understanding will be dependent upon their participation in, and attentiveness to, class and group discussions and the assigned practice questions (done in class, with support as needed).

4. BIG IDEAS

Key resources: https://curriculum.gov.bc.ca/ (choose course under Curriculum, match lesson to one or more Big Ideas)

*What are students expected to **UNDERSTAND**? How is this lesson connected to Big Idea/s or an essential question?*
Big Idea: M*ixed numbers and decimal numbers represent quantities that can be decomposed into parts and wholes (Gr.6)* *Decimals, fractions, and percents are used to represent and describe parts and wholes of numbers (Gr.7)* **Elaboration**: What are the connections between fractions, mixed numbers, and decimal numbers?
1. *Number* represents and describes quantity. 2. *Fractions* allow us to describe parts of a whole. 3. *Mixed numbers* allow us to describe integers (wholes) and fractions (parts of a whole). 4. *Decimal numbers* allow us to describe integers (wholes) and fractions (parts of a whole) using a decimal point to separate the whole number part and the fractional part. 5. Fractions, mixed numbers, and decimal numbers can be converted (one to another) using mathematical processes and calculations.

5. LEARNING STANDARDS/INTENTIONS

Key resources: https://curriculum.gov.bc.ca/ (choose course under Curriculum)

Curricular Competencies: *What are students expected to **DO**?*	**Content:** *What are students expected to learn (**KNOW**)?*
Students will participate in a class review on how to compare and order decimals using place value knowledge as well as how to convert fractions of different type to decimals (using calculators) so that they can be compared	Students will know how to compare and order decimals using our place value system. Students will understand that they need to line up (or visualize) decimal numbers according to place value, then work from left to right to compare them (greater than, less than, or equal to) or order

and ordered alongside decimals. Students will solve problems independently (during the allotted practice time). 1. **Reasoning and analyzing:** • Use reasoning and logic to explore, analyze, and apply mathematical ideas. • Demonstrate and apply mental math strategies. • Model mathematics in contextualized experiences. 2. **Understanding and solving:** • Apply multiple strategies to solve problems in both abstract and contextualized situations. • Develop, demonstrate, and apply mathematical understanding through play, inquiry, and problem solving. • Visualize to explore mathematical concepts. 3. **Communicating and representing:** • Use mathematical vocabulary and language to contribute to mathematical discussions. • Explain and justify mathematical ideas and decisions. • Communicate mathematical thinking in many ways. • Represent mathematical ideas in concrete, pictorial, and symbolic forms. 4. **Connecting and Reflecting:** • Reflect on mathematical thinking. • Connect mathematical concepts to each other and to other areas and personal interests. • Use mathematical arguments to support personal choices.	them (greatest to least or least to greatest). Students will know to look at the whole numbers place first, followed by the tenths place, hundredths place, thousandths place, and so forth, when comparing and ordering decimals. Students will know that fractions and decimals are two ways of representing the same amount and that fractions can be converted to decimals in several ways (division on our calculators being the easiest and fastest way). Students will know that mixed number fractions can be converted to improper fractions before converting to decimals or left in whole number form as long as the whole number is written on the left-hand side of the decimal before converting the fractional amount using division and writing that amount on the right-hand side of the decimal. Students will know that converting fractions to decimals allows us to easily compare & order fractions and decimals. Students are expected to **KNOW** the following: • Multiplication and division facts to 100 (developing computational fluency). • Factors and multiples – greatest common factor and least common multiple. • Improper fractions and mixed numbers. 

6. ASSESSMENT PLAN

Key resources: Instructional Design Map and https://curriculum.gov.bc.ca/classroom-assessment

How will students demonstrate their learning or achieve the learning intentions? How will the evidence be documented and shared? Mention any opportunities for feedback, self-assessment, peer assessment and teacher assessment. What tools, structures, or rubrics will you use to assess student learning (e.g. Performance Standard Quick Scale)? Will the assessments be formative, summative, or both?
Students will demonstrate their learning and understanding of "Comparing & Ordering Fractions and Decimals" in several ways: (1) In the responses they provide during class discussions. (2) In the responses they provide during self-assessed thumbs up/down polls. (3) In their responses to practice questions. (4) In a low-stakes, summative, quiz (Thursday due to skiing on Friday).

Students will receive formative feedback at each of the three initial stages of learning, followed by summative feedback at the fourth stage.

Student responses to the practice questions will be handed in at the end of the lesson/block, so that I can review and provide feedback to students on where they are at in their learning (vs. where they need to be) before the next lesson. This way, I can adjust my instruction, reviewing and/or re-teaching when necessary. I can also arrange additional support and go over corrections (working toward mastery of the concept). Throughout the week, students will have ample opportunity to practice, gain teacher feedback, and receive extra support.

The low-stakes, summative quiz will assess student understanding of the concepts and quiz results will help determine if students need further instruction/review of the concepts or if they are ready to move to new concepts.

7. DESIGN CONSIDERATIONS

Key resources: Instructional Design Map

Make brief notes to indicate how the lesson will meet needs of your students for: differentiation, especially for known exceptionalities, learning differences or barriers, and language abilities; inclusion of diverse needs, interests, cultural safety and relevance; higher order thinking; motivations and specific adaptations or modifications for identified students or behavioural challenges. Mention any other design notes of importance, e.g. cross-curricular connections, organization or management strategies you plan to use, extensions for students that need or want a challenge.
This lesson will be delivered to students who spent yesterday learning about, and practicing, the processes involved in comparing and ordering fractions and decimals. Once again, levelled work will be provided so that all students feel challenged with a "good fit" option. Exceptionalities: One student needs support regulating emotions and behaviour. This student has a designated EA and there is a plan in place to help avert significant behavioural challenges. This student can follow through with this lesson, and its tasks, with the supports previously in place. Several students in this group are colour-blind, so I have chosen texts that account for colour-blindness (i.e., avoided red, green, and light blue) and will write on the board with black markers.
Required preparation: *Mention briefly the resources, material, or technology you need to have ready, or special tasks to do before the lesson starts, e.g. rearrange desks, book a room or equipment.*
I will need to do the following: (1) Open today's lesson plan and have the leveled worksheets ready to display. (2) Photocopy sufficient copies of each leveled worksheet (level 1/2, 2/3, 3/4, and 4) and have ready for students. (3) Have answer keys ready for marking.

8. LESSON OUTLINE

Instructional Steps	**Student Does/Teacher Does** *(learning activities to target learning intentions)*	**Pacing**
OPENING: *e.g. greeting students, sharing intentions, look back at what was learned, look ahead to what will be learning, use of a hook, motivator, or other introduction to engage students and activate thinking and prior knowledge*	Cue all students (6s and 7s) that it is time for Math, referring to the visual schedule, and direct them to get their pencils and **calculators** out before settling in at their assigned spots Ask students to sharpen their pencils and use the washroom before we begin. Remind them that they should not be leaving during instructional time as this causes them to miss out on important information. When students are organized, ready, quiet, and "eyes on", let them know that we will continue to practice comparing and ordering fractions AND decimals. Draw their attention to white board where review material will be displayed.	Quick transition to lesson; interactive and lively pace. (5 min)

BODY: • *Best order of activities to maximize learning -- each task moves students towards learning intentions* • *Students are interacting with new ideas, actively constructing knowledge and understanding, and given opportunities to practice, apply, or share learning, ask questions and get feedback* • *Teacher uses learning resources and strategic opportunities for guided practice, direct instruction, and/or modelling* • *Can include: transitions, sample questions, student choices, assessment notes (formative or otherwise), and other applications of design considerations*	I DO: Walk students through a brief review of the processes involved in comparing and ordering decimals, drawing specific attention to a few of the issues I noticed when marking yesterday's levelled worksheets (i.e., level 1, fractions to decimals with tenths vs. one hundredths; level 2, comparing using the number line vs. dividing the fraction's numerator by the denominator and having the two numbers being comparing in decimal form; level 3, ordering multiple decimals, where you must start to the left of the decimal and work to the right to compare – lining all the decimals up if you are struggling to find the correct order). STUDENTS DO: Participate in the review, engaging with the discussion and review problems. I DO: Ask students if they have any other questions or concerns about comparing or ordering decimals or about the worksheets from yesterday. STUDENTS DO: Ask questions/raise concerns. I DO: Answer questions and concerns. I DO: Tell students that they will continue working on their levelled worksheets from yesterday (if they did not complete them). If they finished, I marked them and they are in the hand-back bin—they should grab them and do any corrections before proceeding to a new, "good fit" worksheet (keeping in mind that further learning does not occur if they choose work that is too easy, and that they must choose work that challenges them to extend their current knowledge). I DO: Display the worksheets on the Smart Board and review the types of questions they are asked to do on each level. I DO: Ask students if they have any other questions or concerns before they proceed to practice. STUDENTS DO: Ask questions/share concerns/get clarification. I DO: Answer student questions/concerns. Then, let them know that they have the remainder of the Math block to practice and should proceed to complete their worksheets, corrections, and/or get a new, more challenging worksheet. Remind students that they need to have their name clearly indicated. Tell students that if they finish early, they must select another, more challenging, worksheet to extend their thinking. If there is only a short amount of time left until Gym, they can work on their Math Minute, any of their finish unfinished work, or read—they should not be visiting with friends, leaving the classroom, or being unproductive. STUDENTS DO: Finish yesterday's worksheet, do corrections, and then select a "good fit" worksheet and work quietly (independently or with a partner) until finished. I DO: Circulate the room, providing feedback and assistance when needed. Check in with those who were away to bring them up to speed. Provide extra support to those struggling.	Interactive, Responsive and lively pace. Redirect students who go off-task as needed. 10-15 minutes of instruction/ review followed by 35-40 minutes of practice.

	STUDENTS DO: Early finishers, select another, more challenging, worksheet from the levelled options. I DO: Give reminders of time remaining and re-direct students who are not doing their jobs.	
CLOSING: • *Closure tasks or plans to gather, solidify, deepen or reflect on the learning* • *review or summary if applicable* • *anticipate what's next in learning* • *"housekeeping" items (e.g. due dates, next day requirements*	2 minutes before the end of Math, cue students that it is nearing the end of their math time and that (1) they should wrap up the question they are working on, and (2) hand in what they have completed with their name clearly indicated so that I can mark and provide feedback. Let students know that I will return their practice questions tomorrow morning, with feedback, so that they can ask clarifying questions and do their corrections (working toward mastery of the concepts). Ask students to relate their level of understanding by a show of "thumbs up" (I got it), "thumbs in the middle" (I get some of it), or "thumbs down" (I am confused/do not get it). Cue students to move on to the next scheduled activity (i.e., wash hand/sanitize and head to gym).	5 minutes or less to wrap up.

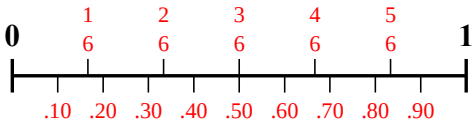
9. **REFLECTION**

• *Did any reflection <u>in</u> learning occur, e.g. that shifted the lesson in progress?* • *What went well in the lesson (reflection <u>on</u> learning)?* • *What would you revise if you taught the lesson again?* • *How do the lesson and learners inform you about necessary next steps?* • *Comment on any ways you modelled and acted within the Professional Standards of BC Educators and BCTF Code of Ethics?* • *If this lesson is being observed, do you have a specific observation focus in mind?*
*To be completed at the end of the lesson.

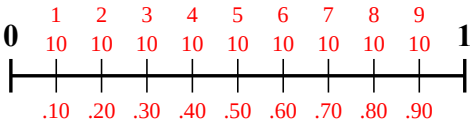
Comparing Fractions to Decimals with Number Line Name:

Use the number line to solve each problem.

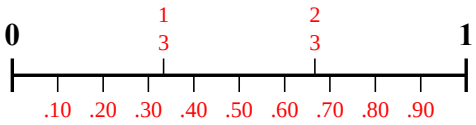
1) Which amount is larger, $\frac{3}{6}$ or .38 ?



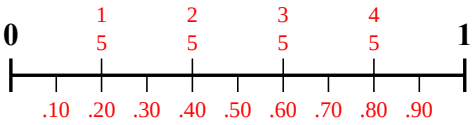
2) Which amount is larger, $\frac{4}{10}$ or .26 ?



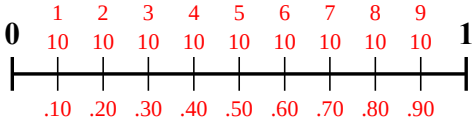
3) Which amount is larger, $\frac{1}{3}$ or .18 ?



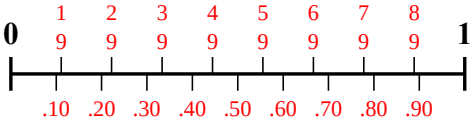
4) Which amount is larger, $\frac{3}{5}$ or .43 ?



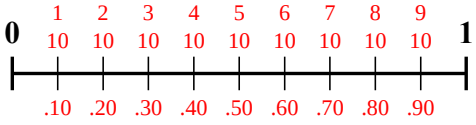
5) Which amount is larger, $\frac{3}{10}$ or .44 ?



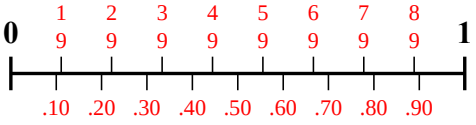
6) Which amount is larger, $\frac{7}{9}$ or .64 ?



7) Which amount is larger, $\frac{1}{10}$ or .25 ?

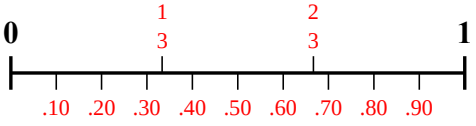


8) Which amount is larger, $\frac{4}{9}$ or .54 ?



9) Which amount is larger, $\frac{1}{2}$ or .31 ?

10) Which amount is larger, $\frac{2}{3}$ or .87 ?



Answers

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

1-10	90	80	70	60	50	40	30	20	10	0

Name : _____ Score : _____

Teacher : _____ Date : _____

Order Decimals

Order the numbers from least to greatest.

1)	**0.34 ; 0.15 ; 0.1 ; 0.68**	2)	**9.7 ; 9.68 ; 9.67 ; 9.3**
3)	**6.17 ; 6.840 ; 6.083 ; 6.24**	4)	**0.580 ; 0.362 ; 0.15 ; 0.09**
5)	**1.2 ; 1.17 ; 1.9 ; 1.50**	6)	**0.9 ; 0.1 ; 0.4 ; 0.599**
7)	**1.5 ; 1.96 ; 1.55 ; 1.12**	8)	**0.31 ; 0.352 ; 0.239 ; 0.787**
9)	**0.26 ; 0.171 ; 0.710 ; 0.187**	10)	**3.4 ; 3.1 ; 3.9 ; 3.3**
11)	**0.5 ; 0.4 ; 0.7 ; 0.35**	12)	**6.7 ; 6.82 ; 6.43 ; 6.11**
13)	**0.217 ; 0.91 ; 0.711 ; 0.606**	14)	**7.2 ; 7.050 ; 7.5 ; 7.640**
15)	**0.605 ; 0.80 ; 0.470 ; 0.864**	16)	**4.05 ; 4.9 ; 4.7 ; 4.887**

Ordering Decimals (A)

Instructions: Order each set of decimals.

0.62, 0.38, 0.35, 0.49, 0.1, 0.21, 0.54, 0.6, 0.51, 0.28
Least to Greatest

0.23, 0.2, 0.77, 0.49, 0.74, 0.91, 0.65, 0.23, 0.03, 0.83
Greatest to Least

1.42, 1.41, 1.18, 1.34, 1.44, 1.52, 1.61, 1.03, 1.26, 1.56
Least to Greatest

1.17, 0.72, 0.82, 1.2, 0.87, 0.81, 0.81, 0.97, 0.84, 0.91
Greatest to Least

1.33, 1.51, 1.53, 1.16, 1.41, 1, 1.4, 1.65, 1.17, 1.62
Least to Greatest

0.56, 0.55, 0.62, 0.6, 0.59, 0.52, 0.47, 0.59, 0.58, 0.48
Greatest to Least

2.01, 1.35, 1, 2.54, 2.52, 2.04, 2.71, 2.7, 2.33, 1.35
Least to Greatest

Ordering with Fractions, Decimals & Percentages

Write all answers in your exercise book. Don't forget to rewrite the list using the original numbers now what you have converted them to.

1. Find a common denominator for these fractions BEFORE you order them (smallest to biggest) . Do not use a calculator.

a $\frac{1}{4}, \frac{1}{2}, \frac{3}{4}, \frac{7}{8}$

b $\frac{1}{3}, \frac{1}{2}, \frac{4}{6}, \frac{1}{6}$

c $\frac{3}{5}, \frac{1}{10}, \frac{7}{10}, \frac{1}{2}$

d $\frac{2}{3}, \frac{3}{4}, \frac{5}{6}, \frac{7}{12}$

e $\frac{4}{5}, \frac{11}{20}, \frac{9}{10}, \frac{3}{4}$

f $\frac{2}{3}, \frac{3}{5}, \frac{13}{15}, \frac{2}{5}$

g $\frac{5}{9}, \frac{5}{6}, \frac{17}{18}, \frac{1}{2}$

h $\frac{7}{12}, \frac{1}{2}, \frac{5}{8}, \frac{13}{24}$

2. Put these decimal in order starting with the smallest

a $0.23, 0.2, 0.3, 0.023$

b $0.6, 0.5, 0.05, 0.55,$

c $0.31, 0.103, 0.3, 0.1, 0.013$

d $0.8, 8.0, 0.42, 2.04$

3. Change any fractions to decimals first (divide top by bottom using a calculator) then rewrite these in order starting with the smallest.

a $\frac{1}{4}, 0.4, \frac{3}{4}, 0.3$

b $\frac{1}{8}, 0.2, 0.04, \frac{3}{8}$

c $\frac{7}{16}, \frac{2}{3}, 0.6, 0.5$

d $\frac{8}{9}, 0.9, \frac{5}{6}, 0.88$

e $\frac{3}{7}, \frac{1}{2}, 0.49, 0.2$

f $\frac{3}{5}, 0.24, 1, \frac{5}{4}$

4. Now we have percentages as well, use your calculator to convert fractions to decimals as in Q3 and convert percentages to decimals (divide them by 100). Then rewrite the list in order from smallest to biggest

a $\frac{7}{10}, 0.07, 77\%, \frac{17}{20}$

b $\frac{5}{16}, \frac{3}{4}, 65\%, 0.7$

c $\frac{7}{9}, \frac{2}{3}, 0.66, 78\%$

d $\frac{7}{32}, 25\%, 0.05, \frac{29}{100}$

e $2\%, 22\%, \frac{1}{5}, \frac{222}{1000}, 0.202$

Comparing & Ordering Fractions and Decimals

1. a) Write the following fractions in **ascending** order:

$$\frac{3}{5}, \quad \frac{7}{10}, \quad \frac{1}{2}, \quad \frac{3}{4}, \quad \frac{9}{10}$$

b) Write the following fractions in **descending** order:

$$\frac{8}{9}, \quad \frac{1}{6}, \quad \frac{7}{18}, \quad \frac{5}{6}, \quad \frac{11}{36}$$

2. a) Write the following mixed numbers / improper fractions in **ascending** order:

$$\frac{18}{5}, \quad 3\frac{1}{3}, \quad \frac{16}{15}, \quad 2\frac{5}{6}, \quad \frac{37}{30}$$

b) Write the following mixed numbers / improper fractions in **descending** order:

$$\frac{9}{2}, \quad 2\frac{1}{8}, \quad \frac{7}{4}, \quad 2\frac{3}{4}, \quad \frac{7}{8}$$

3. a) Write the following decimals in **ascending** order:

0.57, 0.7, 0.07, 0.5, 0.75, 0.77

b) Write the following decimals in **descending** order:

2.904, 2.49, 4.209, 4.2, 2.44, 2.094, 2.9

4. a) Write the following fractions and decimals in **ascending** order:

$\frac{1}{5}$, 0.4, $\frac{7}{10}$, 0.9, $\frac{1}{2}$

b) Write the following fractions and decimals in **descending** order:

$\frac{3}{20}$, 0.5, $\frac{9}{10}$, $\frac{4,}{5}$ 0.2

5. a) Write the following in **ascending** order:

$\frac{7}{20}$, $\frac{9}{100}$, 0.8, 0.14, $\frac{11}{50}$

b) Write the following in **descending** order:

$\frac{11}{10}$, $\frac{9}{5}$, 1.6, 1.4, $\frac{3}{2}$

6. Convert the following decimals to fractions in their *simplest form*:

a) 0.7

b) 0.8

c) 0.4

d) 0.35

e) 0.55

f) 0.06

g) 0.624

h) 0.33

i) 0.5

j) 0.75

k) 0.844

l) 0.002