UNBC UNIVERSITY OF NORTHERN BRITISH COLUMBIA

EDUC 391 LESSON PLAN

Candidate's name: Joni Hesselgrave

Grade/Class/Subject:	Grade 6 Mathematics	School:	Lakeview Elementary
Date:	Wednesday, February 23, 2022	Allotted Time:	75 minutes
Topic/Title:	Equivalent Fractions (*Student Book*, Lesson 1, Unit 8: Fractions, Percents, Ratios, and Rates)		

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 *revisit* the concept of **equivalent fractions** (fractions that describe the same amount) and **fractions in simplest form** (fractions with no common factor other than 1 in their numerator and denominator). Reviewing this concept will help students solidify the knowledge that (a) equivalent fractions are formed by multiplying or dividing the numerator and denominator by the same non-zero number (knowing this does not change the value of the fraction since it is the equivalent of multiplying it by 1), and (b) equivalent fractions, in simplest form, will be the same.

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	C **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 equivalent fractions and fractions in simplest form. T **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 make, identify, and simplify equivalent fractions.

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 this lesson, I will encourage students to be patient and kind to themselves as they learn new concepts. This lesson will be delivered via an open, non-judgmental group discussion, 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

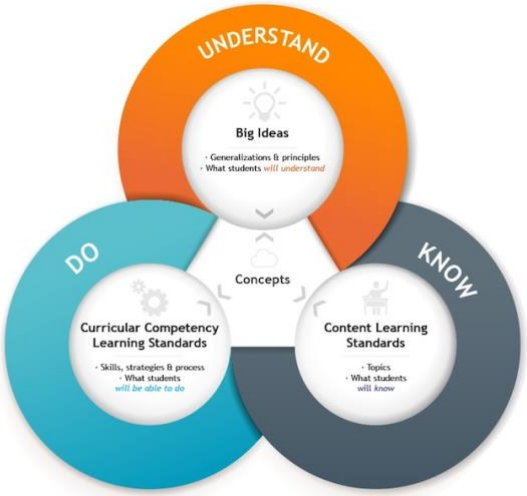
Key resources: https://curriculum.gov.bc.ca/ (choose course under Curriculum, match lesson to one or more Big Ideas)

*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.* **Elaboration**: How many ways can you represent a given fraction?
1. Equivalent fractions use different-sized fractional parts to describe the same amount. 2. To find an equivalent fraction, multiply or divide the numerator and denominator by the same non-zero number. Since this is equivalent to multiplying by 1, the value of the fraction is not changed. 3. A fraction can have an unlimited number of equivalent fractions.

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 find equivalent fractions in a list and use multiplication and division to create equivalent fractions. That is, students are expected to **DO** the following: **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.	Students will know that equivalent fractions represent the same part of a whole; that by multiplying or dividing the numerator and denominator by the same non-zero number, they are not changing the value of the fraction; and, that a fraction in simplest form has no common factor other than 1 in their numerator and denominator. That is, 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.

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.	

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 Equivalent Fractions and Fractions in Simplest Form in several ways: (1) in the responses they provide during our "Review" discussion; (2) in the responses they provide during a self-assessed thumbs up/down "Rate Your Understanding" poll; and (3) in their responses to questions during "Time to Practice." Students will receive formative feedback at each of the three stages of learning. 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 (in lessons to follow), students will have ample opportunity to practice, gain teacher feedback, and receive extra support. At the end of the week (Friday's lesson plan), students will have a low-stakes, summative quiz to assess understanding of the 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 have already spent time working toward mastery of multiplication and division (as they pertain to the Grade 6 curriculum). As such, all students have the previous knowledge necessary to: (a) form equivalent fractions by multiplying or dividing the numerator and denominator by the same non-zero number (understanding that this does not change the value of the fraction since it is the equivalent of multiplying it by 1), and (b) find equivalent fractions amidst lists of fractions. This lesson is review (of yesterday's materials) and will be used to guide further lessons in this learning sequence. Exceptionalities: One student has a designated EA and needs support to regulate emotions. There is plan in place to help avert significant behavioural challenges, but this student can follow through with this lesson, and its tasks, with the

supports previously in place. There are no other exceptionalities amongst this group of students that will interfere with student involvement/participation in this lesson.

This lesson is important because students will frequently encounter situations involving fractions in their daily lives (sharing parts of a whole, recipes, discounts, etc.). An understanding of these concepts provides students with the numerical and analytical skills necessary to be informed consumers and effective workers in our society. The skills students will develop in this lesson (and Unit) will enhance their knowledge of, and flexibility in thinking about, "number."

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) Scan to email Math Makes Sense Student Book Unit 8, Lesson 1, pages #82-83 and display on Smart Board.
(2) Have videos for lesson ready, on my computer, to show on the Smart Board.
(3) Photocopy lesson, with practice questions, pg. 82-83, for students (12 copies).
(4) Make sure extra loose-leaf paper and pencils are easily accessible.
(5) Have the answer key ready for marking.

8. LESSON OUTLINE

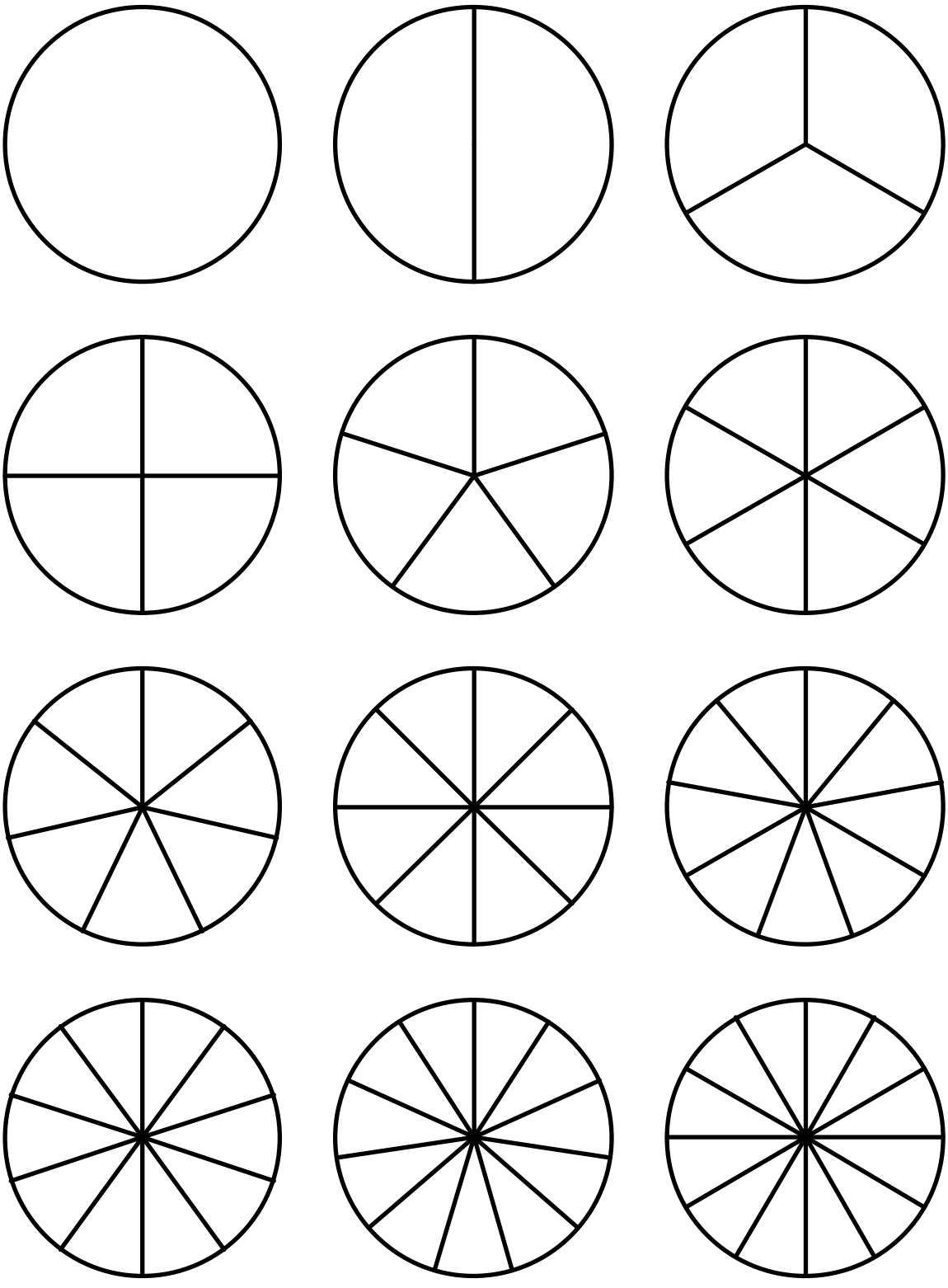
Instructional Steps	Student Does/Teacher Does *(learning activities to target learning intentions)*	Pacing
OPENING: *e.g. greeting students, sharing intentions, look back at what was learned, look ahead to what will be learning, use of a hook, motivator, or other introduction to engage students and activate thinking and prior knowledge*	Cue Grade Six students that it is time for Math, referring them to the visual schedule, and direct them to make sure they have a pencil, their multiplication table, and the Fraction tools from yesterday (Fraction Circles and Fraction strips) before settling in at their assigned tables. Ensure that the Grade Seven students who are not involved in this lesson are doing the tasks assigned to them—General Knowledge research/Math Minute/Daily Language work—while they await their math lesson). When students are organized and ready, inform them that we are "switching gears" a bit (recognizing that yesterday's textbook lesson was a bit overwhelming). Rather than completing the questions from yesterday, we will review the concepts (referencing the two main objectives on the board) to help us solidify the knowledge and then do some practice questions from the Math Makes Sense *Student Book.* *Note: these questions are less wordy than the textbook practice questions. Remind students that participation in class discussions and class review will help solidify the learning intentions, as will watching the supplementary videos and practicing and applying understanding to the assigned questions.	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: Show the following videos: • "Equivalent Fractions" by Let's Do Math/Pow Toon 4 Edu, March 23/17. https://www.youtube.com/watch?v=qcHHhd6HizI AND/OR (depending on if they understood – gauge in situ) "Equivalent Fractions" by Math with Mr. J, August 23/21 https://www.youtube.com/watch?v=dBZ2QGZBH6M AND • "How to Simplify Fractions" by Math with Mr. J, January 3/22 https://www.youtube.com/watch?v=4CKDqvddhhg After the videos, hand out today's worksheet: *Student Book* Unit 8, Lesson 1, pgs. 82-83. Project the same pages onto the Smart Board. Talk students through "Quick Review." WE DO: As a class, go through one practice question from each section of questions. Ask for students to volunteer answers as we go (to ensure they understand the questions being asked of them). I DO: Reinforce that: • They can use their multiplication charts. • To find an equivalent fraction with a greater numerator and denominator, multiply both by the same number. • When you find an equivalent fraction by dividing, you are simplifying the fraction. • If you multiply the numerator and denominator by the same number, you do not change the value of the fraction and the same is true when you divide. • That the number you multiply or divide by cannot be 0.	Interactive, Responsive and lively pace. Redirect students who go off-task as needed. (30 min of instruction/ informative videos, followed by 30 min of practice).

	YOU DO: Tell students that it is now time for them to practice what they have learned by doing the rest of the practice questions. Inform them that they have the remainder of the Math block to complete as many questions as possible, and that they must hand in what they complete so that I can gauge understanding and provide feedback. Remind students that they need to have their name clearly indicated. Early finishers are to hand in their practice questions and resume working on their General Knowledge/Math Minute/Daily Language work. I DO: Let students know that the Grade Sevens will now receive their lesson and that now is the time to ask any clarifying questions. Answer any questions and then tell students that if they get stuck while I am instructing, they can consult a peer or other adult in the room. When I am done with the Sevens, they can raise their hand or approach me, and I will happily help answer any questions they are still stuck on. Once done the Grade Seven lesson, I will circulate the room to provide additional support as needed.	
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 ALL 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). Let students know that I will return their practice questions tomorrow, with feedback, and that there will be time for them to do corrections, ask clarifying questions, and gain more practice. Ask students to relate their level of understanding by a show of "thumbs up" (I get it), "thumbs in the middle" (I get some of it), or "thumbs down" (I am confused/do not get it). Cue ALL students (grade six and seven) to move on to the next activity/ scheduled task (i.e., Lunch hour).	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.

Black Line Fraction Circles



Fraction Strips

1 Whole											
$\frac{1}{2}$						$\frac{1}{2}$					
$\frac{1}{3}$					$\frac{1}{3}$					$\frac{1}{3}$	
$\frac{1}{4}$				$\frac{1}{4}$				$\frac{1}{4}$				$\frac{1}{4}$	
$\frac{1}{5}$				$\frac{1}{5}$		$\frac{1}{5}$			$\frac{1}{5}$		$\frac{1}{5}$		
$\frac{1}{6}$			$\frac{1}{6}$			$\frac{1}{6}$			$\frac{1}{6}$			$\frac{1}{6}$	
$\frac{1}{8}$		$\frac{1}{8}$		$\frac{1}{8}$		$\frac{1}{8}$		$\frac{1}{8}$		$\frac{1}{8}$		$\frac{1}{8}$	
$\frac{1}{10}$	$\frac{1}{10}$		$\frac{1}{10}$		$\frac{1}{10}$		$\frac{1}{10}$		$\frac{1}{10}$		$\frac{1}{10}$		$\frac{1}{10}$
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