

Course: Math

Grade level: 4/5 split

Unit topic: Adding and Subtracting Fractions

Lesson topic: Adding Fractions

Objectives (core competencies, curricular learning standards, content learning standards):

Math: *Big Idea*- Numbers describe quantities that can be represented by equivalent fractions.

Content Standards- Whole number, fraction and decimal benchmarks.

Curricular learning standards- Communicate mathematical thinking in many ways.

Music: *Big Idea*- "Dance, drama, music, and visual arts are each unique languages for creating and communicating."

Content Standards- "Notation to represent sounds, ideas, movements, elements, and action."

Curricular learning standards- "Adapt learned skills, understandings, and processes for use in new contexts and for different purposes and audiences."

Learning Objectives:

1. After this lesson students will be able to add decimals in the form of fractions.
2. After this lesson students will be able to use musical notations to represent ideas like adding fractions.

Prerequisites:

Students will need to have an understanding of what fractions and decimals are and the values of what a quarter note, half note, and full note are. They also need to have previous knowledge in how to compare and order fractions as well as musical notes.

Required resources/ Materials:

resources and worksheets are linked below:

https://docs.google.com/presentation/d/1aKRDhYr7ZYcJpfXXwhuSIXIRp_b37Zk8xAAIz2990mA/edit?usp=sharing

(Music lesson plan resources start at the slide "MUSIC LESSON RESOURCES")

(Math lesson plan resources start later at the slide "MATH LESSON RESOURCES")

Time Allotted:

Lesson- 5 minutes

Activity 1- 3-5 minutes

Activity 2- 5-8 minutes

Activity 3- 3-5 minutes

Closure- 3 minutes

Lesson outline: Introduction/motivation/hook, Development (content & strategies), Consolidation/Summarize

Introduction: Today we will be teaching you how to add decimals in the form of fractions while using musical notations in an engaging way. In our previous lesson you have learned how to compare and order fractions.

Hook: How is everyone feeling today? Showing me a thumbs up, thumbs down, or thumbs in the middle, how do you feel? On a scale of 1 to 5 show me using your fingers how you feel about fractions so far? 1 being very confused and 5 being very confident.

Lesson: First, we want to show you how decimals are equivalent to fractions. On the board, we have some decimals written out and beside it, is their equal fractional value, and then beside that we have the equal musical note and how many beats they represent. Finally, on the very right hand side of the board we have the pie charts showing visually how to represent each fractional value.

Activity 1: This activity will require students to convert fractions into their equivalent decimal form and then add them together. The students will be given the equation in its fractional form, and then they will have to convert them into a decimal equation. They can put the decimals in the empty boxes and then add them together and write the answer in decimal form. The goal of this lesson is to help build fluency in basic fraction to decimal conversions, and also basic decimal addition.

Activity 2: This activity will require students to identify each fraction value and draw a series of music notes to get to that desired value. The fractions will be in the right column and the left column will be blank. On the left side students will have to use one or more musical notes to make the two columns equal. The goal of this activity is to get the students to add the fractions together while realizing there is more than one way to get to the desired fractional value. For example $\frac{3}{4}$ could be three quarter notes or a half note and a quarter note.

Activity 3: This activity will require students to compose their own piece of music. They will use quarter, half and whole notes to make measures of four total beats. This lesson will teach the students to add fractions together to make a whole number which in this case will be $\frac{4}{4}$.

Consolidation/Summarize: Today we learned how to add decimals and fractions by using our knowledge of musical notes and the values that they represent. You all were able to understand fractions and what they represent in decimals which then allowed you to add them together and get an understanding of how this will work when adding fractions in their true forms. You all were also able to get practice with adding musical notes in a way where your goal was to create an equal value to specific fractions. Finally, you had the opportunity to create a musical piece which allowed you to add music notes together to create two complete $\frac{4}{4}$ time measures. Now on a scale of 1 to 5 how do you feel about your understanding of fractions and how to add them? Thank you for listening. In the next lesson we will be learning how to subtract fractions.

Adaptations/modifications (Gearing down, Gearing up):

Activity 1

Gearing down- There could be an option of a cheat sheet where the fractions are written down with their equivalent decimal value.

Gearing up- The students could write the answers to the equations in both decimal and fraction form. There is also a bonus question that the students can attempt.

Activity 2

Gearing down- Students only answer the questions that have equivalent music note value. They answer $1/1$ and $1/2$.

Gearing up- Students can answer the bonus question provided.

Activity 3

Gearing down- For students who are not fully comprehending the task, make it clear to them that for one bar they can use just half notes for example and for the other bar they can use whole notes. Or, have them just focus on 1 bar not 2.

Gearing up- You are not allowed to use a whole note in either measure, only quarter and half notes.

Assessment:

In activity 1 students will have demonstrated an understanding by having completed the worksheet fully with all 3 answers being correct.

0/3- not meeting expectations

1/3- barely meeting expectations

2/3- on the right track to meeting expectations

3/3- meeting expectations

3/3 plus gearing up- exceeding expectations

In activity 2 students will have demonstrated an understanding by having completed the worksheet fully with all 3 answers being correct.

0/3- not meeting expectations

1/3- barely meeting expectations

2/3- on the right track to meeting expectations

3/3- meeting expectations

3/3 plus gearing up- exceeding expectations

In activity 3 students will have demonstrated an understanding by having completed the worksheet (creating your own 4/4 time measure) correctly having each measure they made equal to 4 beats.

0/3- not meeting expectations

1/3- barely meeting expectations

2/3- on the right track to meeting expectations

3/3- meeting expectations

3/3 plus gearing up- exceeding expectations

Overall, we can assess the students throughout the lesson by asking purposeful questions while they are working on their answers. For example, “how do you know this equals 1/1?” “Why do you think your answer is correct?”

References (APA):

Building Student Success - B.C. Curriculum.

<https://curriculum.gov.bc.ca/curriculum/mathematics/5/core>.