

Beat by a Fraction

Fifth Grade + Math + Music

CORE SUBJECT AREA

Math

ART FORM + ELEMENTS

Music
Rhythm

MSCCR STANDARDS

CCSS.MATH.CONTENT.5.NF.A.1 Add and subtract fractions unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.

MSCCR CREATIVE STANDARDS

MU:Cr1.1.5.b. Generate musical ideas (such as rhythms, melodies, and accompaniment patterns) within specific related tonalities, meter, and simple chord changes.

DURATION

90 minutes

OBJECTIVE

TSW add fractions with unlike denominators.
TSW collaborate to generate a rhythmic sequence.

MATERIALS NEEDED

Paper
Pencils

VOCABULARY

Fraction
Rhythm
Measure
Beat
Whole note
Half note
Quarter note

RECOMMENDED RESOURCES

Fractions of a Note handout, Rhythms Worksheet, and fraction manipulatives found at https://fwsymphony.org/education/materials/1415_musical_math.pdf

Video found at <https://www.youtube.com/watch?v=7Bt1BF1PC2k>

Music note guide found at <https://carwad.net/wallpaper-638999>

Backing track found at <https://www.youtube.com/watch?v=V0hO17thk5M>

LESSON SEQUENCE

Introduction

- TTW review the students' knowledge of fractions by asking them what are some things in life that can be divided into fractions.
- TTW list the students' responses on the board.

- TTW ask the students if they know that fractions are present in music.
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- TTW display the “Fractions of a Note” chart found on page 8 of https://fwsymphony.org/education/materials/1415_musical_math.pdf
- TTW review the names of the different notes with the students: whole note, half note, quarter note, eighth note, and sixteenth note.
 - TTW explain to the students how the different notes are all fractional parts of a whole note (ex. Two half notes make a whole note, four quarter notes make a whole note, etc.)
 - TTW explain to the students that different music notes are used to create rhythm in a piece of music.
- TTW play the video found at <https://www.youtube.com/watch?v=7Bt1BF1PC2k>

Transition

- TTW explain to TS that music notes in 4/4 time must all be added together to equal one whole.
 - TTW explain that one must follow the steps for adding fractions with unlike denominators to ensure their rhythm is in the correct measure.
- TTW display a music staff on the board 4/4 measure and the following notes’ symbols written on it: $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$, and $\frac{1}{8}$. (Guide for music notes found at <https://carwad.net/wallpaper-638999>)
- TTW write the fraction equivalents of the note symbols in the form of an addition equation.
 - TTW guide TS in adding the fractions using the following steps: Finding the LCM of the denominators.
 - Multiplying the fractions to find a common denominator. Adding fractions. Simplifying.
 - TTW distribute the “Rhythms Worksheet” found on page 11 at https://www.fwsymphony.roge/education/materials/1415_musical_math.pdf
- TTW split the students into small groups of three or four.
 - TSW work in small groups to find what notes are missing from the sequences to create a 4/4 measure.
 - TSW follow the steps TT modeled on the board to add fractions with unlike denominators. (Before having TS do the worksheet, review that the notes in problem 3 with the curved line beneath them are $\frac{3}{16}$ notes and that the students should hold their hands together doing 1&e and clap on the a (beat).
- TT and TSW review the answers.
 - TT and TSW clap the rhythm they created.

Description

- TTW distribute to TS copies of the music note manipulatives found on pages 5 and 6 of the PDF guide found at https://www.fwsymphony.roge/education/materials/1415_musical_math.pdf
(NOTE: make each group several copies of the pages so they have plenty of notes to manipulate. Also, you will have to add one flag to a quarter note to create an eighth note)

and add two flags to a quarter note to create a sixteenth note. This should be done before making copies, so TS have plenty of copies of each note.

- TSW work together in their small groups to create at least three different rhythms in 4/4 meter using the different music notes provided.
 - TSW ensure accuracy by showing the process behind adding the fraction equivalents of the notes on paper to make sure they are maintaining 4/4 measure.
 - TSW choose their favorite beat of the three they created and will decide a way of presenting (stomping, clapping, a combination of different movements, etc.)
- TSW practice presenting their beat.
- TSW play the backing track found at <https://www.youtube.com/watch?v=V0hO17thk5M> (start at :35) to help the class stay together during their presentations.
 - TSW guide their classmates in performing their beats with them.

EXTENDED LEARNING ACTIVITIES

None

SOURCES

Handouts found at https://www.fwsymphony.roge/education/materials/1415_musical_math.pdf

Music note guide found at <https://carwad.net/wallpaper-638999>

Backing track found at <https://www.youtube.com/watch?v=V0hO17thk5M>