

# Adding fractions:

composing measures of music



## Math & Music

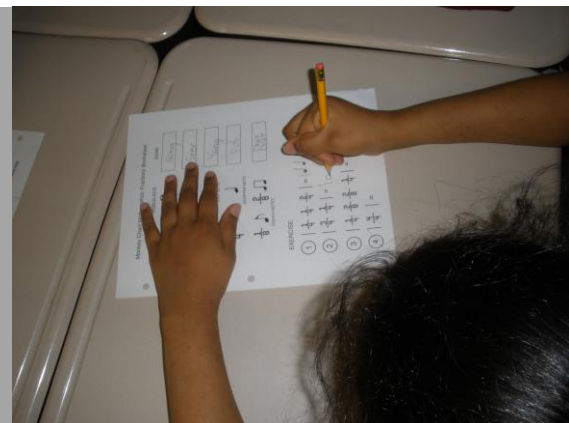
Grade  
4 & 5

### Math Common Core Standard(s) Grades 4 & 5

- 4.NF.3a : Understand addition of fractions as joining parts referring to the same whole
- 4.NF.3b : Decompose a fraction into a sum of fractions with the same denominator in more than one way
- 5.NF.1 : Add fractions with unlike denominators by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum of fractions with like denominators.
- 5.NF.2 : Solve word problems involving addition of fractions referring to the same whole, including cases of unlike denominators, Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.

### Music (MD) Standard(s) Grades 4 & 5

- 4.1.1.d Describe environmental sounds heard, with attention to rhythm
- 4.3.2.b Create simple melodic patterns that show contrast: whole notes and whole rests, half notes and half rests, quarter notes and quarter rests, two eighth notes connected, tied notes (2 measures)
- 5.3.2.a Compose, arrange, and notate music to accompany readings or dramatizations



## CONNECTED OBJECTIVES

Students learn to add fractions by adding music notes and compose measures of music in  $\frac{4}{4}$  time.

## MATERIALS & RESOURCES

- Worksheets

## KEY CONTENT VOCABULARY

- denominators
- equivalent fractions
- benchmark fractions

## KEY ARTS VOCABULARY

- measures  $\frac{4}{4}$  time
- quarter note
- half note
- dotted half note
- whole note
- eighth notes

# A s s e s s m e n t

- Students compose a specified amount of measures of music in  $\frac{4}{4}$  time to enhance part of a story using various notes whose fractional beats add up to one whole.



# L E S S O N S T E P S

Introduce and define different notes (students should recognize this concept as part of their music curriculum)

- Connect the fractional beats to each note i.e. a whole note has 4 whole beats by clapping and counting beats out loud
- Assign a sound to each type of music note so that as notes are clapped there are corresponding sounds chanted for each note
- Explain that today students will compose measures of music by adding fractions and representing them with music notes

Begin working through the examples

- Explain that in 4/4 time, there must be four beats (not necessarily 4 different notes unless you are using a 4 quarter notes) in a measure
- Look at the first example together. Clap and say the sounds that go with each note. Rewrite the measure using music notes.

Allow students to rewrite the next four measures on their own or with a partner. Circulate to make sure that students are following instructions. Be sure that students are rewriting the bars that indicate when a measure begins and ends

- Demonstrate to students how they can create a three-measure composition by combining the previous separate measures of music together. Clap and chant the sounds as you read the composition.
- Discuss how music can be added to a story to stir feelings and create tone. For example, if we were composing music for a peaceful forest, the music might be calm and steady- using whole notes and rests. However, if we were composing music for a battle scene, we might still use whole notes but dress it up with quick and furious eighth notes followed by rest in the end. You might choose to demonstrate by clapping and chanting the corresponding sounds.
  - At this point in time, teachers might have students reflect on a story they are currently reading in language arts or even choose to read them a short story to give students a basis to compose measures of music.
  - Students should be given time to select a portion of the story to compose a soundtrack for. Students should be asked to consider the setting and characters in that scene in order to portray as much detail to their composition as possible.
  - For early finishers, see extensions and options below.

# EXTENSIONS & OPTIONS

- How many different ways can students use the given music notes to represent  $\frac{4}{4}$  time?
- Introduce single eighth notes and sixteenth notes
- Incorporate quarter rests, crescendos, etc. into composition to add effect

# SOURCES & RESOURCES







Monkey Chant: Tim Gregory, founder of Nada Brahma Productions LLC.

<http://timgregory.org>

# G E T S M A R T T H R O U G H T H E A R T S

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## Monkey Chant Mathematics: Fractions Worksheet

<u>FRACTION</u>	<u>MUSICAL NOTE</u>	<u>SOUND</u>
$\frac{4}{4}$	 WHOLE NOTE	<input type="text"/>
$\frac{3}{4}$	 DOTTED HALF NOTE	<input type="text"/>
$\frac{2}{4}$	 HALF NOTE	<input type="text"/>
$\frac{1}{4}$	 QUARTER NOTE	<input type="text"/>
$\frac{1}{8}$  $\frac{2}{8}$ 	EIGHTH NOTES	<input type="text"/>

EXERCISE:

$$\textcircled{1} \left| \frac{1}{4} \frac{1}{4} \frac{2}{4} \right| =$$

$$\textcircled{2} \left| \frac{3}{4} \frac{1}{4} \right| =$$

$$\textcircled{3} \left| \frac{1}{4} \frac{2}{8} \frac{2}{8} \frac{1}{4} \right| =$$

$$\textcircled{4} \left| \frac{4}{4} \right| =$$

## Monkey Chant Mathematics: Fractions Guide

FRACTION

MUSICAL NOTE

SOUND

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



WHOLE NOTE

$$\frac{3}{4}$$



DOTTED HALF  
NOTE

$$\frac{2}{4}$$



HALF NOTE

$$\frac{1}{4}$$



QUARTER NOTE

$$\frac{1}{8} \quad \frac{2}{8}$$



EIGHTH NOTES

PRACTICE DRAWING NOTES: