

# Scale Numbering with Mean Median and Mode



# Math and Music

Grade 6

**Math (MDCC) Standard Grade 6**  
 6.SP.3 Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.

**Music (MD) Standard(s) Grade 6**  
 3.2.b. Create a sound composition based on a literary work, a place, a personal experience, or other selected subject.



## CONNECTED OBJECTIVES

Students learn about creating a musical composition as a group, using mathematical terms, and use those terms to complete text and musically related examples.

## MATERIALS & RESOURCES

- Examples from Math text
- Musical Math activity sheet
- A recording of “Ode to Joy” by Ludwig van Beethoven

## KEY CONTENT VOCABULARY

- Mean
- Median
- Mode
- Range

## KEY ARTS VOCABULARY

- Pitch
- Scale
- Composition
- Note

## ASSESSMENT

- Group performance of a key content vocabulary composition
- Successful completion of the Musical Math activity sheet
- Quick check closure - Multiple choice questions

Freu - de, schön - er    Göt - ter - lun - ken,    Toch - ter aus E - ly -  
 Come and sing a    joy - ful cho - rus,    Lift your voic - es to

wir be - tre - ten    feu - er - trunk - en,    Himm - li - sche, dein Hei -  
 Help - ing hands now    join in friend - ship,    Keep - ing hearts and spir -

Dei - ne Zau - ber    bin - den — wied - er,    was die — Mo - de stren  
 Sis - ter, broth - er,    care for each oth - er,    Care for the world and keep

al - le Men - schen    wer - den Bräut - er,    wo dein sanft - ter Flü -  
 Come — to - geth - er,    sing to - geth - er,    As a peace - ful fam -

# LESSONS STEPS

## MOTIVATION/INTRODUCTION

Play the music to Beethoven's 9<sup>th</sup> Symphony as the students enter. Explain that today they will be connecting music with mean, median, mode, and range.

## MODELING

- Teach the students the definition to mean, median, mode, and range citing examples from the text.

## GUIDED PRACTICE

- Break students up into four groups and assign each group one of the four terms. Allow the students to create a short rap using their term and definition.
- Allow each group to perform their rap for the class and have the class echo each rap back in order to commit it to memory.

## INDEPENDENT PRACTICE

- Tell the students to use the raps they just created to help them find the mean, median, mode, and range for the example from the text.
- Explain the *Scale Numbering* worksheet and allow students to complete the worksheet. *Optional: Play Beethoven's 9<sup>th</sup> Symphony as students work.*

## CLOSURE

**Closure:** Students will complete an exit ticket using the following questions...

1. Jenny counted how many planes flew over her house each day for a week. Here is how many she counted.

*Sunday* 8

*Monday* 7

*Tuesday* 11

*Wednesday* 7

*Thursday* 5

*Friday* 15

*Saturday* 4

She wanted to find which number happened most often. She was looking for the...

- A mean
- B median
- C mode
- D range

2. Mr. Curran counted how many jumping jacks 5 students in one of the second grade classes could do in one minute. The numbers he counted were 23, 27, 32, 40, and 56. He wanted to know which amount was closest to the center value. He was looking for the...

- A mean
- B median
- C mode
- D range

3. John has five bags of valentine candy. He wants to know the average amount of candy in each bag. He needs to find the...

- A mean
- B median

- C mode
- D range

4. Miss Dawn received a shipment of 4 new snack items. The snacks cost \$1, \$1.25, \$1.50, and \$.50. She wanted to know the difference between the highest and lowest priced items. She wanted to find the...
- A mean
  - B median
  - C mode
  - D range

## EXTENSIONS & OPTIONS

- Students
  - Give students the option of using instruments and/or choreography in their compositions.
  - Students who finish the first portion of Ode to Joy early may choose to complete the second half (with new scale numbers)
  - Students can create their own short melody and find its values or have a classmate find the values and compare answers

## SOURCES & RESOURCES

Adapted from: *Creating meaning through literature and the arts: an integration resource for classroom teachers* (3rd ed.) by C.E. Cornett (2007). Upper Saddle River, N.J.: Merrill/Prentice-Hall.

## GET SMART THROUGH THE ARTS

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## Supporting Documents

Name \_\_\_\_\_

### Scale Numbering with Mean, Median, Mode, and Range

Each note represents a number. Write the number that matches each note above the note and find the mean, median, mode, and range of the first part of "Ode to Joy" by Ludwig van Beethoven. Don't forget to show your work.



Freu - de, schön - er Göt - ter - fun - ken, Toch - ter aus E - ly - si - um,  
 Come and sing a joy - ful cho - rus, Lift your voic - es to the sky.

wir be - tre - ten feu - er - trunk - en, Himm - li - sche, dein Hei - lig - tum!  
 Help - ing hands now join in friend - ship, Keep - ing hearts and spir - its high.

Mean \_\_\_\_\_

Median \_\_\_\_\_

Mode \_\_\_\_\_

Range \_\_\_\_\_