

## The Music of Fractions

**Grade Level:** Grade K – 2

**Content area(s):** Math and Music

**Classroom Time:** 60 minute class period

**Purpose:** The student will understand and represent  $\frac{1}{4}$ ,  $\frac{1}{2}$ , and  $\frac{1}{3}$  through music.

**Skills Addressed:**

*Math skill:* Understand and represent  $\frac{1}{2}$ ,  $\frac{1}{3}$ , and  $\frac{1}{4}$ th

*Music Skill:* Recognize/understand the value of quarter and half notes in common and  $\frac{3}{4}$  time

**Supplies:**

Internet access, handouts, pencils

**Lesson Process:**

Warm-up –

- A. Listen to/sing [Twinkle, Twinkle, Little Star](#)
- B. Give the students the sheet music to “Twinkle, Twinkle, Little Star.” – *Attachment 1*
- C. Share with the students that the marks on the paper are called notes and music is composed of different types of notes.

Lesson procedure –

- A. Listen to/sing [Twinkle, Twinkle, Little Star](#) again asking the students to look at the notes as they are singing.
- B. Ask the students the following questions:
  - What do you see on the piece of music? – *Ex: Lines, words, numbers, black marks, squiggly sign, a “C,” etc..*
  - How many different types of notes do you see and what are they? – *Ex: 2 – one is colored in and one isn’t OR 7 – some are on lines, in spaces or below the lines*
  - A measure is from the beginning to the first vertical line or bar line, then from that vertical/bar line to the next vertical/bar line. (*If vertical or bar line is too complicated use “the line that goes up and down” or show them with a hand movement, etc*) How many measures are in the music? -12
- C. Show the students the different types and names of the notes. *Attachment 2*
- D. Have the students count the number of *quarter* notes in the song “Twinkle, Twinkle, Little Star.” - 36
- E. Have the students count the number of half notes in the song “Twinkle, Twinkle, Little Star.” - 6
- F. Have the students count the number of half notes in the song “Twinkle, Twinkle, Little Star.” – *None*

- G. Mention to the students the numbers above each measure, the 1's, 2's and 4's. Share with them the numbers right above the measures (the blue numbers) count the value or beat of each note. The red numbers or number at each bar line is always a 4, the number of counts or beats in each measure. Review the song to notice the numbers and the patterns.
- H. Have the students look at the first measure. Ask them the following questions:
- How many measures are there? - 12
  - How many 4's are there? - 12
  - How many 1's? - 36
  - How many 2's? - 6
  - Is there a pattern with the numbers? Do you notice where all the 4's are, where? –  
*Ex: Each line has the same numbers, the 4's are at the end of the measure or near the bar line*
- I. Share with the students that a whole note would equal one measure, a half note is  $\frac{1}{2}$  of the measure, and a quarter note is  $\frac{1}{4}$ <sup>th</sup> of the value of the measure. Select a couple of the measures of music to look at asking the students the value of the note and its fractional representation in the measure.
- J. Listen to the following music with the students - [Alabama](#). While the students are listening ask them to see if they can find the beat in the song. They can even pretend like they are “conducting” the music.
- K. Ask the students how many beats they thought were in a measure. Once several student have given their answer share with them that there are *four* beats in each measure just like in “*Twinkle, Twinkle, Little Star.*”
- L. Tell the students to listen very carefully to the next piece of music. Ask them to see if they can determine the number of beats in a measure. - [Waltz from De Fledermaus](#). They can pretend to “conduct” the music.
- M. Ask the students how many beats were in the measure. – 3
- N. Share with the students the name of the waltz, “*De Fledermaus.*” Also share with the students that there are three beats or counts in a measure for waltz’.
- O. Explain to the students that even though there are three beats/counts in the measure the value of the quarter note is still one count and the value of the half note is still two counts/beats.
- P. Ask the students the following questions:
- How many beats are in a measure of a waltz? - 3
  - What note would represent  $\frac{1}{3}$ <sup>rd</sup> of the measure? – *A quarter note*
  - A quarter note is what fraction of the measure?  $\frac{1}{3}$ <sup>rd</sup>
- Q. Either have the students work individually or put them in small groups to complete the handout. *Attachment 3*

Student assessment or final product to be developed:

Class participation, teacher observation, and handout

### Extension activities

- A. Students “write” their own music using quarter and half notes for either common time or  $3/4$  time after sharing with them quarter and half rests.
- B. Students listen to a march ([Sousa Marches](#) – select one) to determine the number of counts in a measure. Ask the students if they heard the march before, the value of a quarter note, a half note and their fractional value in a measure.

# Twinkle, Twinkle, Little Star

1 1 1 1 1 1 2 1 1 1 1 1 1 1 2

4 4 4 4 4 4

5  
Twin-kle, twin-kle, lit - the star, how I won - der what you are!

1 1 1 1 1 2 1 1 1 1 1 1 2

4 4 4 4 4 4

9  
Up a - bove the world so high, like a dia - mond in the sky.

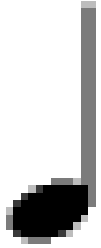
Twin-kle, twin-kle, lit - the star, how I won - der what you are!

## *Musical Notes*

*Note*

*Name*

*Value*



Quarter Note

1 Count



Half Note

2 Counts



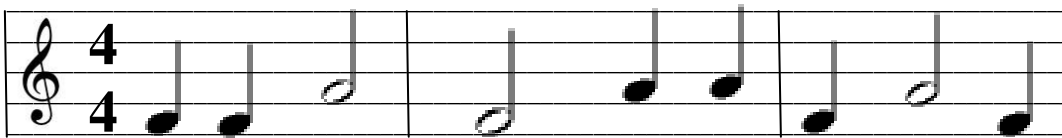
Whole Note

4 Counts

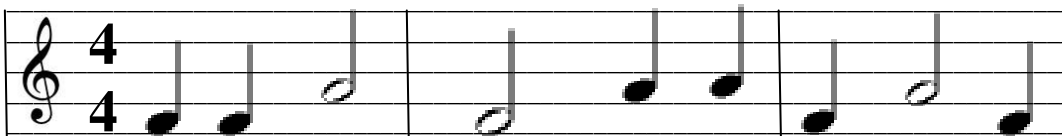
## My Song

Name(s) \_\_\_\_\_

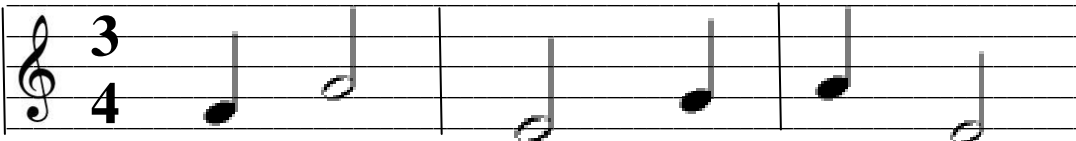
1. Circle the note in each measure that is  $\frac{1}{2}$  of the measure. There are 4 beats in each measure.



2. Circle the note in each measure that is  $\frac{1}{4}$ <sup>th</sup> of the measure. There are 4 beats in each measure.



3. Circle the note in each measure that is  $\frac{1}{3}$ <sup>rd</sup> of the measure. There are 3 beats in each measure.



## **National Standards**

### **Math**

*Understand numbers, ways of representing numbers, relationships among numbers, and number systems*

- understand and represent commonly used fractions, such as  $\frac{1}{4}$ ,  $\frac{1}{3}$ , and  $\frac{1}{2}$

### **Music**

#### [NA-M.K-4.5](#) *READING AND NOTATING MUSIC*

- Students read whole, half, dotted half, quarter, and eighth notes and rests in  $\frac{2}{4}$ ,  $\frac{3}{4}$ , and  $\frac{4}{4}$  meter signatures

#### [NA-M.K-4.8](#) *UNDERSTANDING RELATIONSHIPS BETWEEN MUSIC, THE OTHER ARTS, AND DISCIPLINES OUTSIDE THE ARTS*

- Students identify ways in which the principles and subject matter of other disciplines taught in the school are interrelated with those of music (e.g., foreign languages: singing songs in various languages; language arts: using the expressive elements of music in interpretive readings; mathematics: mathematical basis of values of notes, rests, and time signatures; science: vibration of strings, drum heads, or air columns generating sounds used in music; geography: songs associated with various countries or regions)