Grade 3: Musical Fractions

LBUSD Grade 3, Math Unit 5 – Fractions

Common Core Mathematics Standards: *Develop understanding of fractions as numbers.*

CCSS.MATH.CONTENT.3.NF.A.1
Understand a fraction 1/*b* as the quantity formed by 1 part when a whole is partitioned into *b* equal parts; understand a fraction *a*/*b* as the quantity formed by *a* parts of size 1/*b*.

CCSS.MATH.CONTENT.3.NF.A.3
Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.

- CCSS.MATH.CONTENT.3.NF.A.3.A
  Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.

- CCSS.MATH.CONTENT.3.NF.A.3.B
  Recognize and generate simple equivalent fractions, e.g., 1/2 = 2/4, 4/6 = 2/3. Explain why the fractions are equivalent, e.g., by using a visual fraction model.

California State Visual and Performing Arts Standards: Music, Grade 3

1.0 ARTISTIC PERCEPTION

Processing, Analyzing, and Responding to Sensory Information Through the Language and Skills Unique to Music

- Students read, notate, listen to, analyze, and describe music and other aural information, using the terminology of music.
  - *Read and Notate Music*
    - 1.1 Read, write, and perform simple rhythmic patterns using eighth notes, quarter notes, half notes, dotted half notes, whole notes, and rests.

2.0 CREATIVE EXPRESSION

Creating, Performing, and Participating in Music

- Students apply vocal and instrumental musical skills in performing a varied

repertoire of music. They compose and arrange music and improvise melodies, variations, and accompaniments, using digital/electronic technology when appropriate.

- *Apply Vocal and Instrumental Skills*

  - 2.3 Play rhythmic and melodic ostinatos on classroom instruments.

National Core Arts Standards for Music

Grade 3 MU:Pr4.2.3

b. When analyzing selected music, read and perform rhythmic patterns and melodic phrases using iconic and standard notation.

This lesson correlates with chapter 8 of *Go Math.*
The lesson can be integrated in different ways.

- It can be taught all at once in the middle or at the end of the chapter.
- It can be used as enrichment.
- It can be broken into segments and used as introduction to the *Go Math* lessons.
- It can be used at the end of the *Go Math* lessons as additional practice.

Lesson Sequence

1. Discovering fractions and relationships between fractions.
   - Distribute the fraction bar worksheet included with this lesson – blank or colored.
     - Alternatively you can use the page from *Go Math*, fraction tiles, or other fraction manipulative.
   - For this lesson focus specifically on one whole, one half, one fourth (one quarter), and one eighth.
   - Student color sections to make one whole, or use manipulatives to create whole blocks using same size tiles (1 whole, 2 halves, 4 quarter, 8 eighths).

- Practice naming the fractions and check that students understand the relationship between the name of the fraction and number of tiles or pieces it takes to make one whole.

2. Music Connection
   - After students show they understand the fraction bars, explain that each one whole can be expressed musically.
     - The one whole gets four beats. Show the one whole fraction and clap four times. Each clap is one beat. Have students clap with you.
     - Cover the one whole with two ½ tiles. Show that since it takes 2 of the ½ tiles to cover the one whole tile, each will get 2 beats, 2 claps.
       - Together clap out one tile, then clap two together.
     - Do the same with the 1/4 tiles, each one getting one beat, 1 clap.
     - Experiment with different combinations of wholes, halves, and quarters.
     - Once the students have the beats down for the whole, ½, and ¼, show the 1/8 tiles. Since it takes 2 of these to cover the ¼ tile (that gets 1 beat), you will have to clap two times just in one beat. Count out the one whole as "one, and, two, and, three, and, four, and." Each word will have a clap.
     - As additional practice you can use the sample rhythms included with this lesson.
     - For more fun, try clapping a selected rhythm along to a piece of music. Here are some examples that can be fun, but any piece of music that has 4/4 time will work. If you have rhythm band instruments you can also use those to play the rhythm.
       - "Skip to My Lou"
         - https://www.youtube.com/watch?v=29C-hm6uxnA (Pete Seeger)
         - https://www.youtube.com/watch?v=Be7TFJdtwkA (Karaoke)
         - https://www.youtube.com/watch?v=NxPrsI3aAQo (Karaoke with animation)
       - "Eye of the Tiger"
         - This one is good because it has a steady slower beat that is easy for students to keep up with.
         - https://www.youtube.com/watch?v=btPJPFnesV4
       - "Happy"
         - https://www.youtube.com/watch?v=y6Sxv-sUYtM

At this point students will have met music standards PR4.2.3 by using the fraction bars as an "iconic" notation. You may extend the lesson by using standard music notation.

- Show students how the measures in the music correspond to the one whole fraction bar. The piece of music has several "one whole bars" put together each one is called a "measure."
    - Give students the handout page showing the music notes and corresponding beats.
    - Show that the notes are a shortcut for writing the number of beats each gets. Each note is equivalent to the fraction bars.
    - Practice clapping the sample rhythms, or playing them with rhythm band instruments.
- Show students a simple piece of music. If you have access to music books for your grade level such as, "Music Connection," you can use any piece of music in the book that has 4/4 time signature and uses only whole, half, quarter, and/or eighth notes
    - You can also use this music ("Twinkle, Twinkle, Little Star")
        - http://www.8notes.com/scores/2904.asp
    - Count, clap, or play the rhythms of the music using rhythm band instruments.
    - Mix and match segments of rhythm and clap or play along to various songs.
- When you think students are ready use the methods above to introduce eighth notes.
    - A song that works well for this is "Everyday" by Buddy Holly. The clapping in the background is consistent eighth notes throughout the song.
    - Here is a link to Buddy Holly's version
        - https://www.youtube.com/watch?v=ty31QY5ZGHo
        - Not only is this a nice song because of the steady beat, but it features the little-used celeste, a member of the piano family that is heard famously in Tchaikovsky's "Dance of the Sugar Plum Fairy" from the *Nutcracker Suite.*
    - This version is more modern and is nice because it has a split screen that shows the singer clapping out the eighth notes – which switches to beat-boxing later in the song.
        - https://www.youtube.com/watch?v=UlYiSRVl6bs