

## Unit/Lesson Instructional Plan

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**Unit/Lesson Title: Understanding Fractions through Music**

**Grade Level: 4**

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**School: Ayer, Greenberg, & Rowell Elementary Schools    District: Fresno Unified School District**

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### **Essential Understanding**

*What is the “Big Idea” of the unit or lesson?*

Student will thoroughly understand the relationships between whole, halves, and quarters, beyond being able to demonstrate knowledge of fractions on paper, but to internalize and know or feel the relationship between parts.

The temporal relationship between whole, half, and quarter notes in music duration, will strengthen student understanding of the physical and visual relationship between parts when dividing objects and numbers into halves and quarters. Students will additionally be prepared for the abstract thinking required in higher level mathematical processes and to understand and read rhythms in musical notation.

### **Skills and Knowledge Students Need and/or Will Develop**

- Students will need a basic understanding of fractions, whole,  $\frac{1}{2}$ , and  $\frac{1}{4}$ .
- Students will need an understanding of \$1, half dollars, and quarters.
- Students will need beginning recorder instruction to be able to play 1 to 3 notes (fingering and blowing correctly)
- Students will develop an understanding of duration of sound through whole notes, half notes, and quarter notes.
- Students will develop the ability to clap and count whole, half, and quarter notes as a group and individually.
- Students will develop the ability to clap and count whole, half, or quarter notes in a group, while two other groups are clapping and counting the other notes at the same time.
- Students will develop the ability to walk and count to whole, half, and quarter notes as a group and individually.
- Students will develop the ability to walk and count to whole, half, or quarter notes in a group, while two other groups are walking and counting the other notes at the same time.
- Students will develop the ability to play whole, half, or quarter notes as a group and individually on the recorder.
- Students will develop the ability to play whole, half, or quarter notes as a group, while two other groups are playing the other notes at the same time.

**Standards Addressed**

<u>Music Content Standards</u>	<u>Content Standards in Other Subject(s)</u>
1.1 Read and perform rhythmic notation 2.3 Compose and improvise simple rhythmic and melodic patterns on a classroom instrument.(if activity is extended beyond basic lesson)	Number Sense: 1.5 Explain different interpretations of fractions, for example, parts of a whole, parts of a set, and division of whole numbers by whole numbers; explain equivalents of fractions. 1.6 Write the fraction represented by a drawing of parts of a figure, and represent a given fraction by using drawings. Mathematical Reasoning: 2.3 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models to explain mathematical reasoning.

**Objectives: (final performance or product)**

*In what way(s) will students demonstrate what they have learned?*

Students will demonstrate what they have learned by being able to clap and count, walk and count, and play on the recorder whole, half, or quarter notes individually and as a group, while other individuals or groups play the other notes.

**Student Pre-Assessment**

*How do you know what the students already know? What pre-assessment activities will help you determine what students already know?*

- Assess student knowledge of fractions by questioning and problem solving.
- Assess student knowledge of money values through questioning and counting of money.
- Assess student knowledge of music note values through questioning and music reading activities.

**Teacher's Needs Assessment**

*What content knowledge and resources will you need to implement this lesson?*

- Knowledge of fractions and money values.
- Basic knowledge of music symbols and duration for whole, half, and quarter notes.
- At least some basic experience walking, clapping, singing, or playing an instrument to a steady beat.

### Final Student Assessment

*How will you know that students have achieved the standard?*

- Students will perform rhythms, individually or as a group, clapping and counting, walking, and playing the recorder.

### Learning Sequence

*The Lesson Plan: What are the various steps in the unit/lesson implementation?*

#### Lesson #1:

A) Review concepts of whole, half and quarter.

1. Hold up a \$1 bill, label “whole dollar.”
  - If the dollar is divided in half, we have two “half dollars” (show 2 half dollars)
  - If the dollar is divided in quarters, we have four “quarters” (show 4 quarters)
  - How many quarters in a half dollar? In a dollar?
  - Use play dollars, half dollars, and quarters, allowing students to show how many half dollars equals a dollar, etc.
2. Divide a “whole pizza” into halves and quarters (like above)
  - Use paper pizza parts for students to make pizzas using quarters and halves.
  - Note: Time concepts, i.e. whole hour, half hour, quarter hour may also be used.
3. Introduce symbols for whole note, half note, and quarter note.
  - Discuss how the relationship between music notes is the same as dividing the dollar or pizza into halves and quarters.
  - Use paper music notes for students to show relationships (whole note = 4 beats, half note = 2 beats, quarter note = 1 beat).

B) Clap and count whole notes, half notes, and quarter notes

1. Explain that when we have 4 beats, we call it a **measure** (In 4/4 time, avoid a long explanation involving time signatures, etc.)
2. Clap and count 4 quarter notes, while looking at a measure of quarter notes: **1 2 3 4**
3. Clap and count half notes, while looking at a measure of half notes: **1 2 3 4**
4. Clap and count a whole note (**1 2 3 4**), while looking at a measure with a whole note: **1 2 3 4**
5. Divide class into two groups: one group claps and counts quarter notes and the other does half notes. (at the same time)
6. Divide into 3 groups: Start the quarter note group; add the half note group, then the whole note group. (listen to all 3 groups clap at the same time)
7. Switch parts until each group does each note.
8. Walk and count to whole notes, half notes, and quarter notes.
  - a. Standing up, step to quarter notes (**1 2 3 4**). (marching, right, left, right, left)
  - b. Follow same procedure as in Section B, but walking instead of clapping.

**Lesson #2**

- A) Review concepts of Lesson #1, using discussion and manipulatives.
1. How many quarters equal a whole pizza, a dollar, and a measure? (4)
  2. How many halves in a pizza, a dollar, and a measure? (2)
  3. Compare a whole pizza to a whole dollar and to a measure in music. (the whole for which parts are compared)
  4. How many quarters equal a half? = (2)
  5. How many quarters equal a whole? = (4)
  6. How many halves equal a whole? = (2)
  7. How many whole notes equal a measure? = 1 measure
  8. Etc.
- B) Review clapping and counting and walking from Lesson #1
1. Divide into 3 groups, clapping and counting and/or walking as in previous lesson. Do as many times as needed.
- C) Play whole notes, half notes, and quarter notes on recorder.
1. Students draw or use paper notes to create a measure of quarter notes. ( )
    - a. On the note B (any note will do; the same note for all is preferable), play the measure of quarter notes, teaching counting **1 2 3 4**.
    - b. Play several measures of quarter notes, teacher counting **1 2 3 4**, etc.
  2. Draw or use paper notes to create a measure of half notes ( )
    - a. On the note A (or any note), play the measure of half notes, teacher counting **1 2 3 4**.
    - b. Play several measures of half notes, teacher counting **1 2 3 4**, etc.
  3. Draw or use paper notes to create a measure with a whole note ( )
    - a. On the note G (or any note), play the measure, teacher counting **1 2 3 4**.
    - b. Play several measures of whole notes, teacher counting **1 2 3 4**, etc.
- D) Divide into groups and play rhythms on recorders as clapped and walked to rhythms previously.
1. Divide into 2 groups, playing the same note
  2. Divide into 3 groups, playing the same note.
  3. Have each group play a different note (group 1 play B, group 2 play A, group 3 play G)
  4. Switch rhythms and notes until each group has played.

**Lesson #3 (optional)**

Create a class song. Extend the above lessons by having students combine 4, 8, or 12 measures to create their own class rhythm. Play the class rhythm on one note (B, A, or G). Change the note (B, A, or G) played for each measure, eventually having a different note (pitch) for each whole, half, or quarter note. Write song on paper to save and play again later or use lesson to improvise short songs.

Introduce a 4-beat “combination” measure with 1 half note and 2 quarters by asking students to find all the ways they can think of to make 4-beat measures using quarter and half notes. Add to above class song or improvisation.

1 2 3 4                    or                    1 2 3 4                    or                    1 2 3 4

### **Vocabulary**

*What vocabulary will students need to know and learn, in order to achieve the standards addressed in the unit/lesson?*

whole	half	quarter
note	measure	recorder

### **Equipment, Materials and Resources**

*What equipment, materials, and resources will you need to implement the unit/lesson and the student assessment?*

Play money: 1 dollar bill, 2 half dollars, 4 quarters  
Paper pizzas: 1 whole pizza, 2 half pizzas, 4 quarter pizzas  
Paper music cards: 1 whole note, 2 half notes, 4 quarter notes  
Recorder for each student

### **Additional Notes**

*What adaptations might you make to the learning sequence, to meet the needs of different students?  
Any other notes or comments you would offer with regard to implementing this unit/lesson?*

This lesson is designed with the 4<sup>th</sup> grade student in mind, but can be easily adapted to older grades that have had recorder instruction. It can also be used as pre-instrumental music instruction by a music teacher and in the beginning band and string class and for rhythm development in the chorus.

Extend lessons by adding whole, half and quarter rests.

- = 4 beats of silence
- = 2 beats of silence
- = 1 beat silence

A teacher who is comfortable with musical notation and minimal music performance can extend the above lessons to have students create their own song by creating a string of 4-beat measures, selecting pitches on which to play each measure or individual note. A class music book could be created and shared. Students could perform their own song for others, as well as play the songs others wrote.

Beginning jazz improvisation: Have each student create a 4-beat rhythm (write down, make with paper notes, or spontaneously create). Take turns going around room with each student playing his/her rhythm and the class echoing it, without losing a beat. Add pitches as students are able.