

Musical Fractions

Second Grade

Adapted by Abby Calhoun

CORE SUBJECT AREA

Math

ART FORM + ELEMENTS

Music

Rhythm, Melody

MSCCR STANDARDS

2.G.3: Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.

MSCCR CREATIVE ARTS STANDARDS

MU: Pr6.1.2: Perform appropriately for the audience and purpose.

MU:Cr1.1.2a Improvise rhythmic and melodic patterns and musical ideas for a specific purpose

DURATION

30 Minutes

OBJECTIVES

Students will identify fractions as parts of a whole.

Students will distinguish the different pitch sounds made by the fractional glasses.

Students will match fractional parts to music notes.

MATERIALS NEEDED

Empty glasses, food coloring, water, metal spoons, wooden spoons, fraction cards or tents (to label the glasses), paper, pencils, measuring cup

VOCABULARY

Pitch, fraction, whole, half, numerator, denominator, sixteenth note

LESSON SEQUENCE

The teacher will begin the lesson by using the spoon and tapping the glass in her hand to draw attention. She'll tell the class that each student will be able to tap different glasses and hear different pitch sounds as they use what they've learned in math.

The teacher will review fractional parts of a whole and students will share what they remember about how to identify the numerator and denominator of a fraction.

The teacher will pull out 4 glasses. She'll fill each glass with $\frac{1}{4}$ cup of water and ask what students hear when she taps the glasses.

The teacher will add another $\frac{1}{4}$ cup of water to the 2nd glass. She'll tap on that glass and ask if the students hear a difference in the two glasses.

Make sure that the third glass has $\frac{3}{4}$ a cup of water in it, and the 4th glass is full. Tap each of the glasses after you fill them so students can hear the pitch they make.

Once water is in each glass, choose a student to come add food coloring to each glass to change the color.

Encourage students to experiment with different types of glass tappers, like a metal spoon, a wooden spoon, and so on. Do different tappers produce different sounds? Which one makes the clearest sound?

Another interesting way to produce sounds with the same exact setup is to gently glide your finger around the

edge of the glass to produce a higher-sounding frequency (your finger should be slightly wet).

Tap the glasses in order and see how the pitch changes as you go up ($\frac{1}{4}$ full, $\frac{1}{2}$ full, $\frac{3}{4}$ full and $\frac{4}{4}$ full) and how the pitch changes as you go down ($\frac{4}{4}$ full, $\frac{3}{4}$ full, $\frac{1}{2}$ full, $\frac{1}{4}$ full). You can also talk about high pitch sounds and low pitch sounds and decide which glass makes a high pitch and which makes the lowest pitch.

After you listen to the different sounds each glass makes, have students count the beat of a whole note (a $\frac{4}{4}$ beat) by using their hands to “clap-hold-hold-hold.” You can voice this as you clap by saying, “Ta-a-a-a.”

Each glass will have a different note value represented as the fractional part. Example: the full glass ($\frac{4}{4} = 1$) will be represented by a quarter note (1 beat) and will receive ONE clap for ONE beat, the half full glass will be represented as “tiki” and will receive TWO quick claps. (see picture included for flash card example)

After students have clapped the rhythms each glass represents, you can have students or groups take turns moving the glasses around to make different melodies of music.

EXTENDED LEARNING ACTIVITIES

Have kids try the activity using different types of glasses. You can use regular drinking glasses, juice glasses, and mason jars, for example. Which type of glass makes best sound?

Give your child a list of songs with simple tunes and have him or her figure out how to play them on the water glasses. This activity encourages your child to learn from his or her mistakes to solve a problem.

For more advanced groups, introduce more than 4 glasses and have students identify the fractional parts that come between the already established fractions. Fill those glasses up according to the fraction and see what other songs you can come up with.

SOURCES

This lesson was created by Abby Calhoun

RESOURCES

https://drive.google.com/open?id=1AMOJN_JQZNXvPSS8NNBg8P_qo3Q2vEBx

https://drive.google.com/open?id=1AMOJN_JQZNXvPSS8NNBg8P_qo3Q2vEBx