



artsNOW

Integrated learning solutions

FRACTIONS AND BODY PERCUSSION

Grade Band: 2-3

Content Focus: Music & Math



LEARNING DESCRIPTION

In this lesson, students will explore how they can use body percussion to learn about, represent and compare fractions through music.

LEARNING TARGETS

Essential Questions	“I Can” Statements
<p>How can I represent fractions using body percussion?</p> <p>How does music connect to math?</p>	<p>I can represent fractions with denominators of 4, 8, 12, and 16 in multiple ways within a framework using visual models.</p> <p>I can compare two fractions with different numerators by flexibly using a variety of tools and strategies.</p> <p>I can listen to, analyze, and describe music.</p>



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	<p>I can compose a body percussion rhythm that represents fractions.</p> <p>I can connect music to math.</p>
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GEORGIA STANDARDS

Curriculum Standards	Arts Standards
<p>Grade 3 3.NR.4.1 Describe a unit fraction and explain how multiple copies of a unit fraction form a non-unit fraction. Use parts of a whole, parts of a set, points on a number line, distances on a number line and area models. 3.NR.4.2 Compare two unit fractions by flexibly using a variety of tools and strategies. 3.NR.4.3 Represent fractions, including fractions greater than one, in multiple ways.</p>	<p>Grade 3 ESGM3.RE.1 Listen to, analyze, and describe music. ESGM3.CR.2 Compose and arrange music within specified guidelines. ESGM3.PR.2 Perform a varied repertoire of music on instruments, alone and with others. ESGM3.CN.1 Connect music to the other fine arts and disciplines outside the arts.</p>

SOUTH CAROLINA STANDARDS

Curriculum Standards	Arts Standards
<p>Grade 3 3.NSF.1 Develop an understanding of fractions (i.e., denominators 2, 3, 4, 6, 8, 10) as numbers. 3.NSF.2 Explain fraction equivalence (i.e., denominators 2, 3, 4, 6, 8, 10) by demonstrating an understanding that: a. two fractions are equal if they are the same size, based on the same whole, or at the same point on a number line; b. fraction equivalence can be represented using set, area, and linear models; c. whole numbers can be written as fractions (e.g., $4 = 4/1$ and $1 = 4/4$); d. fractions with the same numerator or same denominator can be compared by reasoning about their size based on the same whole.</p>	<p>Anchor Standard 1: I can arrange and compose music. Anchor Standard 4: I can play instruments alone and with others. Anchor Standard 6: I can analyze music. Anchor Standard 7: I can evaluate music. Anchor Standard 9: I can relate music to other arts disciplines, other subjects, and career paths.</p>

KEY VOCABULARY

Content Vocabulary	Arts Vocabulary
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| <ul style="list-style-type: none"> ● <u>Fractions</u> - Equal parts of a whole ● <u>Numerator</u> - The top number in a fraction that represents how many parts of a whole are being considered ● <u>Denominator</u> - The bottom number in a fraction. It represents the total number of equal parts into which the whole is divided ● <u>Greater than (>)</u> - A number that is larger than another number ● <u>Less than (<)</u> - A number that is smaller than another number ● <u>Equal to (=)</u> - A number that has the same value as another number | <ul style="list-style-type: none"> ● <u>Steady beat</u> - Steady pulse ● <u>Body percussion</u> - Stomping, patting, clapping, snapping, etc.) ● <u>Pitch</u> - High/low sounds ● <u>Rhythm</u> - Long/short sounds ● <u>Dynamics</u> - Loud/soft sound ● <u>Tempo</u> - Fast/slow sounds |
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MATERIALS

- Paper
- Pencils
- Teacher access to computer and Internet

INSTRUCTIONAL DESIGN

Opening/Activating Strategy

- Choose a fractions song (see materials) for students to engage in a “Hear, Think, Wonder” listening routine. This listening routine is a modification of [Project Zero’s “See, Think, Wonder” Thinking Routine](#).
- Prepare students for the listening activity by telling students that they are going to listen to a song and answer three prompts about the song. Wait until the end of the listening activity before revealing the title and composer of the song.
 - The first prompt is “I hear”.
 - Students should focus on the different musical sounds such as tempo (fast/slow), dynamics (loud/soft), instruments, pitch (high/low), and lyrics (words to song). They may use words or draw a quick picture to answer.
 - Play the song audio only one time while students are listening in order to answer the prompt, “I hear”.
 - Students turn and talk to a neighbor and share their answers.
 - Students share out to the class. Validate the answers that students give.
 - Repeat the process for “I think” and “I wonder”.
 - For “I think”, the teacher can ask clarifying questions such as, “What did you hear in the music that made you think that?”.



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- After the listening activity, encourage students to sing along with the recording. Provide a lyric sheet or turn on closed captions so that students can sing along with the video. *(The font of the closed caption can be enlarged by clicking on settings, then English, finally options.)*
 - Start by singing the chorus. Tell students that the chorus is the main idea of the song with repeating lyrics.
 - Lead students in finding the steady beat to the song during the verses by directing students to pat their legs or tap two fingers in a palm.
 - Demonstrate the four basic movements of body percussion (stomp, pat, clap, snap—or tap two fingers in palm if snapping is a challenge). Lead students in each of these movements doing them to the steady beat of the song.
- Transition into the lesson about fractions.

Work Session

- Introduce or review fractions. Use modeling, visual representations, and hands-on manipulatives to help students understand the concept of fractions.
- Transition to the concept of representing and comparing fractions through performing rhythmic movements called body percussion.
 - Remind students of the four basic movements of body percussion used in the activator (stomp, pat, clap, snap—or tap two fingers in palm if snapping is a challenge).
 - Students practice and perform body percussion to a steady beat using the [Body Percussion Grid 1 by Crescendo](#) as a guide. *(*Any occurrence of the shoe can represent stomp.)*
 - Help students determine the fractions of the body movements in Body Percussion Grid 1 (ex: claps = $5/16$ if using the entire board)
 - Students will then compare the fractions using greater than, less than, and equal to.
- Divide students into small groups of three to four students and present the following group task:
 - Tell students that as a group, they will create their own body percussion rhythm using the [Create Your Own Beat Body Percussion Board](#).
 - Predetermine how much of the board students should use (ex: the entire board, only 12 squares, only 8 squares, etc.).
 - Provide time for students to:
 - Compose their body percussion using the blank board.
 - Practice performing the body percussion rhythm to a steady beat.
 - Determine and write fractions based on the occurrence of body parts.
 - Compare the fractions using greater than, less than, and equal to.
 - Students should repeat the process as time allows.

Closing/Reflection

- After a predetermined amount of work time, students will share their body percussion rhythms with the class.
 - Remind performers to do their best. Remind audience members to give their attention to the performing group and applaud the group's effort after the performance.
- Students who are listening should choose one body part to focus on and determine the fraction of that body part in the overall rhythm.



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- Together, the teacher and students will review how students used body percussion to represent and compare fractions.
- Students will sing the beginning fractions song as a closing to the lesson.

ASSESSMENTS

Formative

Teacher will assess student learning through:

- Observation of written responses during the listening activity.
- Observation of “turn and talk” and “sharing out” during the listening activity.
- Observation of students singing with a steady beat.
- Observation of students demonstrating the steady beat during the singing activity.
- Observation and questioning during group task.

Summative

CHECKLIST

- Students can perform the body percussion to a steady beat.
- Students can correctly identify fractions based on the body parts used to create the body percussion rhythms.
- Students can compare fractions using body percussion rhythms.
- Students can create a body percussion rhythm that represents fractions.

DIFFERENTIATION

Acceleration:

- Use the entire body percussion board.
- Include two body percussion sounds per one square on the body percussion board.

Remediation:

- Reduce the number of total squares to complete on the body percussion board.

ADDITIONAL RESOURCES

- [Project Zero's "See, Think, Wonder" Thinking Routine](#)
- [Fractions Songs for Kids by NumberRock](#) (*chorus introduced at :30*)
- [The Fractions Song by Hopscotch](#) (*chorus introduced at :52*)
- [Fractions are Parts of a Whole by Jack Hartmann](#) (*chorus introduced at :15*)
- [Body Percussion Grid 1 by Crescendo](#)
- [Create Your Own Beat Body Percussion Board](#)



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**This integrated lesson provides differentiated ideas and activities for educators that are aligned to a sampling of standards. Standards referenced at the time of publishing may differ based on each state's adoption of new standards.*

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