



artsNOW

Integrated learning solutions

MOVING WITH FRACTIONS Grade Band: 4-5 Content Focus: Dance & Math



LEARNING DESCRIPTION

In this lesson, students will use movement phrases to model common fractions with like denominators and convert fractions into decimals. Students will compare the fraction of locomotor and non-locomotor movements in a movement phrase. Students will then create their own movement phrase and use fractions to describe their performance. Students will recognize that fractions are used in many aspects of our world including the arts.

LEARNING TARGETS

Essential Questions	"I Can" Statements
How can choreography be expressed in terms of fractions?	I can accurately represent fractions of movement in a movement phrase that I choreograph.
What is a fraction?	I can accurately describe a movement phrase using fractions.
How can a fraction be converted to a decimal?	I can compare fractions.



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	I can identify and use locomotor and non-locomotor movements and levels in choreography.
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GEORGIA STANDARDS

Curriculum Standards	Arts Standards
<p>Grade 4: 4.NR.4: Solve real-life problems involving addition, subtraction, equivalence, and comparison of fractions with denominators of 2, 3, 4, 5, 6, 8, 10, 12, and 100 using part-whole strategies and visual models.</p> <p>4.NR.5: Solve real-life problems involving addition, equivalence, comparison of fractions with denominators of 10 and 100, and comparison of decimal numbers as tenths and hundredths using part-whole strategies and visual models.</p> <p>Grade 5: 5.NR.3: Describe fractions and perform operations with fractions to solve relevant, mathematical problems using part-whole strategies and visual models.</p>	<p>Grade 4: ESD4.CR.1 Demonstrate an understanding of the choreographic process.</p> <p>ESD4.CR.2 Demonstrate an understanding of dance as a form of communication.</p> <p>ESD4.PR.1 Identify and demonstrate movement elements, skills, and terminology in dance</p> <p>ESD4.RE.1 Demonstrate critical and creative thinking in dance.</p> <p>Grade 5: ESD5.CR.1 Demonstrate an understanding of the choreographic process.</p> <p>ESD5.CR.2 Demonstrate an understanding of dance as a form of communication.</p> <p>ESD5.PR.1 Identify and demonstrate movement elements, skills, and terminology in dance</p> <p>ESD5.RE.1 Demonstrate critical and creative thinking in dance.</p>

SOUTH CAROLINA STANDARDS

Curriculum Standards	Arts Standards
<p>Grade 4: 4.NSF.2 Compare two given fractions (i.e., denominators 2, 3, 4, 5, 6, 8, 10, 12, 25, 100) by creating common denominators or numerators, or by comparing to a benchmark fraction such as $\frac{1}{2}$ and represent the comparison using the symbols $>$, $=$, or $<$.</p> <p>4.NSF.3 Develop an understanding of addition and subtraction of fractions (i.e., denominators</p>	<p>Anchor Standard 1: I can use movement exploration to discover and create artistic ideas and works.</p> <p>Anchor Standard 2: I can choreograph a dance.</p> <p>Anchor Standard 3: I can perform movements using the dance elements.</p>



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2, 3, 4, 5, 6, 8, 10, 12, 25, 100) based on unit fractions.

a. Compose and decompose a fraction in more than one way, recording each composition and decomposition as an addition or subtraction equation; b. Add and subtract mixed numbers with like denominators; c. Solve real-world problems involving addition and subtraction of fractions referring to the same whole and having like denominators.

Grade 5:

5.NSF.3 Understand the relationship between fractions and division of whole numbers by interpreting a fraction as the numerator divided by the denominator (i.e., $a \div b = \frac{a}{b}$).

Anchor Standard 7: I can relate dance to other arts disciplines, content areas, and careers.

KEY VOCABULARY

Content Vocabulary	Arts Vocabulary
<ul style="list-style-type: none"> ● <u>Fraction</u> - A numerical quantity that represents a part of a whole number ● <u>Numerator</u> - Represents the number of parts out of the whole that are being considered ● <u>Denominator</u> - Represents the total parts of something 	<ul style="list-style-type: none"> ● <u>Movement phrase</u> - A series of movements linked together to make a distinctive pattern ● <u>Non-locomotor</u> - This refers to a movement that does not travel through space ● <u>Locomotor</u> - This refers to a movement that travels through space ● <u>Steady beat</u> - An unchanging, continuous pulse ● <u>Space</u> - An element of movement involving direction, level, size, focus, and pathway ● <u>Level</u> - One of the aspects of the movement element space; in dance, there are three basic levels: high, middle, and low ● <u>Choreography</u> - The art of composing dances and planning and arranging the movements, steps, and patterns of



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	<p>dancers</p> <ul style="list-style-type: none"> ● <u>Choreographer</u> - A person who creates dances ● <u>Shape</u> - This refers to an interesting and interrelated arrangement of body parts of one dance; the visual makeup or molding of the body parts of a single dancer; the overall visible appearance of a group of dancers
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MATERIALS

- Sound source and music with a steady beat

INSTRUCTIONAL DESIGN

Opening/Activating Strategy

- Begin the lesson by engaging students in movement that introduces students to the Elements of Dance: Body, action, space, time and energy.
 - Have students arrange themselves in the classroom with enough personal space to move freely without touching a neighbor.
 - Turn on instrumental music with a steady beat.
 - First, have students bring awareness to their bodies by leading them through gentle stretches starting from the head and moving to the toes (e.g., head circles, shoulder shrugs, toe touches, etc.).
 - Next, bring students’ awareness to the rhythm of the music by having them march in place to the beat with high knees, swinging their arms side to side.
 - Now, direct students to explore energy variations with different movement qualities such as sharp movements—quick, precise actions like punches or snaps, and smooth movements—slow, flowing actions like waves or circles with arms.
 - Finally, bring students’ attention to levels (high, middle, low) and directions (forward, backward, sideways) with movements such as stretching up high and moving on tiptoes, moving low to the ground and crawling forwards and backwards, and bouncing in place at a medium level.
 - Have students return to their seats.

Work Session

- Display a rectangle divided into tenths.
- The tenths should be shaded in three different colors, such as red, white, and blue.
 - The red tenths equal non-locomotor movement.
 - The blue tenths equal locomotor movement.
 - The white tenths equal holds in the movement phrase.



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- Show examples of simple locomotor and non-locomotor movements and have students perform the examples. Ask the students for suggestions of other locomotor and non-locomotor movements and use their suggested movements to perform the movement phrase in the pattern displayed in the rectangle.
- Discuss the fraction of non-locomotor movements and locomotor movements represented in the rectangle.
 - Ask students to add the number of non-locomotor movements and locomotor movements to get the total number of movements during the phrase.
 - Students should represent locomotor movements as a fraction and non-locomotor movements as a fraction.
 - Students should then compare the fractions of locomotor and non-locomotor movements using greater than, less than, and equal to signs.
 - Have students convert the fractions to decimals and add the two decimals.
- Divide students into groups. Students will work with their group to create and perform a simple movement phrase.
 - Before sending groups to work, play music for students to choreograph their dances to; help students find the steady. Then, turn music down and allow students to begin their choreography.
 - Tell students that movement phrases will include 10 steps and must show locomotor and non-locomotor movements and various levels.
 - Students will write the fractions and decimals that describe their movement phrase and compare their fractions using greater than, equal to, or less than signs.

Closing/Reflection

- The students will perform their movement phrases for their classmates. Discuss appropriate audience participation and etiquette prior to performances.
- Turn up the volume of the music and help students find the steady beat again by tapping their toe on the floor.
- Invite the first group up to perform their dance.
 - After each performance, the audience should analyze the dance in terms of locomotor or non-locomotor movements and determine the fraction of locomotor and non-locomotor movements in the phrase. They will also describe the shapes and levels evident in the movement phrase.

ASSESSMENTS

Formative

Teachers will assess students' understanding of the content throughout the lesson by observing students' participation in the activator, ability to identify and compare fractions, ability to work collaboratively to choreograph a movement phrase that demonstrates locomotor and non-locomotor movements and levels, and ability to describe choreography in terms of fractions.

Summative

CHECKLIST

- Students can accurately represent the fractions of movement in the movement phrase they choreograph.
- Students can accurately describe the movement phrases they see using fractions.



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- Students can accurately compare fractions.
- Students can convert fractions to decimals.
- Students can identify and use locomotor and non-locomotor movements and levels in choreography.

DIFFERENTIATION

Acceleration: Challenge students to analyze other elements of their choreography such as levels, directions, and pathways in terms of fractions.

Remediation: Reduce the number of movements students are required to include in their choreography.

ADDITIONAL RESOURCES

NA

**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.*

Ideas contributed by: Whitney Jones. Updated by Katy Betts.

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