

Reflections/Notes:

ATLANTA BALLET
Centre for Dance Education

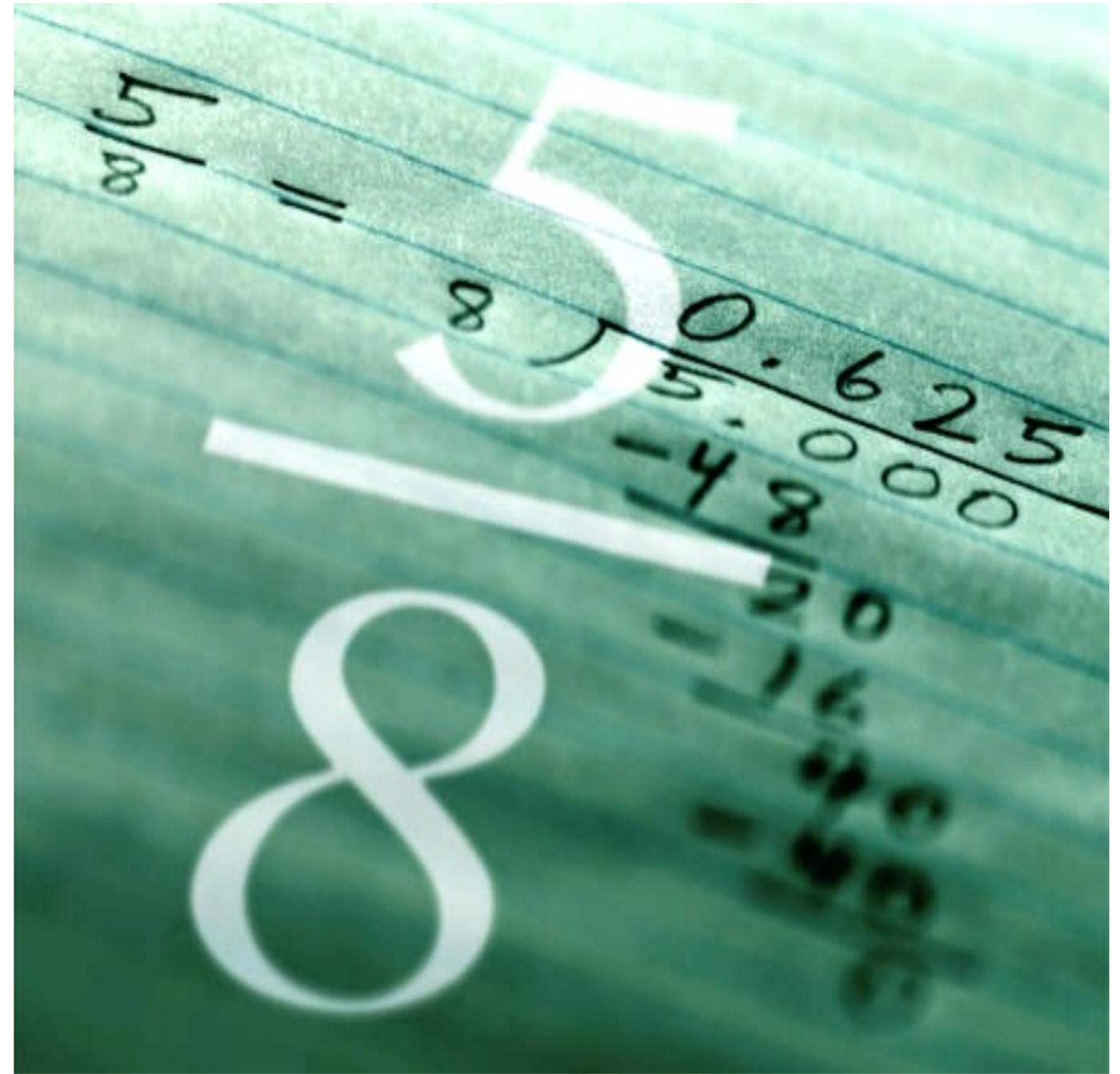
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ArtsNow
Teaching and Learning Across the Curriculum

Curriculum guides provide differentiated ideas and activities for educators that are aligned to a sampling of standards. The guides do not necessarily imply mastery of standards, but are intended to inspire and equip educators.

Form/Structure/Organization • Sequence • Fractions
Problem Solving • Choreography • Percentages



Discover how movement can enhance comprehension of fractions, decimals, and percentages!

Moving with Mathematics

These activities will allow students to explore the concepts of fractions, percentages, and decimals by creating dances using locomotor and nonlocomotor movements.

Essential Question: How can movement and choreography enhance understanding of fractions, decimals, and percentages?

Process

- Teach/review dance movements that will be utilized in choreography.
- Identify the locomotor and nonlocomotor movements.
- Listen to music and count the beats into four or eight beat sections. Divide the sections into fractions or percentages (i.e., 50% of eight beats is four beats, 25% of eight beats is two beats, 3/4 of four beats, 1/4 of four beats, etc).
- Break students into groups and have them create a movement sequence or dance using the learned movements and the criteria assigned to them.
 - Example 1: Create a four-step dance combination that is 3/4 non-locomotor movement and 1/4 locomotor movement.
 - Example 2: Create a 32 beat dance in which 25% of your dance must be locomotor movement, 50% of your dance must be chassé, and 25% of your dance must happen at a low level.
- Students will now perform & present. After students perform, the audience will identify the fractions, percentages, or decimal equivalents the group was illustrating.

Assessment

- Students must perform/move to steady beat.
- Students' dances must match mathematical and movement criteria appropriately.
- Students must be able to correctly solve the math problem.
- Students must be able to identify the fraction/percentage and movement type being performed.

Materials

- sound source (e.g., CD Player) and recordings
- paper and pencils
- written criteria on cards

Vocabulary

Choreographer

A person who creates dances

Beat

Basic unit of musical time; can be heard as a regular pulse underlying music

Dance Composition / Choreography

Creating the movements in dances

Chassé

A gliding dance step with a pattern of step-together-step

Fraction

A number representing part of a whole

Percentage

A way to express a number as a fraction of 100

Locomotor

A movements that travels through space

Non-locomotor

A movement that does not travel through space

Pathway

The designs traced on the floor as a dancer travels across space; the designs traced in the air as a dancer moves various body parts

Common Core Georgia Performance Standards

MATHEMATICS

GRADE 3

MCC3.NF.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 $1/b$.

GRADE 3

MCC4.NF.1: Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.

MCC4.NF.2: Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $1/2$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.

MCC4.NF.3: Understand a fraction a/b with $a > 1$ as a sum of fractions $1/b$.

MCC4.NF.5: Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100.22 For example, express $3/10$ as $30/100$, and add $3/10 + 4/100 = 34/100$.

MCC4.NF.6: Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as $62/100$; describe a length as 0.62 meters; locate 0.62 on a number line diagram.

GRADE 5

MCC5.NF.1: Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. For example, $2/3 + 5/4 = 8/12 + 15/12 = 23/12$. (In general, $a/b + c/d = (ad + bc)/bd$.)

MCC5.NF.2: Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. For example, recognize an incorrect result $2/5 + 1/2 = 3/7$, by observing that $3/7 < 1/2$.

Georgia Performance Standards

MATHEMATICS

GRADE 3

M3N5: Students will understand the meaning of decimal fractions and common fractions in simple cases and apply them in problem-solving situations.

M3P1: Students will solve problems (using appropriate technology).

M3P3: Students will communicate mathematically.

M3P4: Students will make connections among mathematical ideas and to other disciplines.

M3P5: Students will represent mathematics in multiple ways.

GRADE 4

M4N6: Students will further develop their understanding of the meaning of decimal fractions and common fractions and use them in computations.

M4P1: Students will solve problems (using appropriate technology).

M4P3: Students will communicate mathematically.

M4P4: Students will make connections among mathematical ideas and to other disciplines.

M4P5: Students will represent mathematics in multiple ways.

GRADE 5

M5N4: Students will continue to develop their understanding of the meaning of common fractions and compute with them.

M5N5: Students will understand the meaning of percentage.

M5P1: Students will solve problems (using appropriate technology).

M5P3: Students will communicate mathematically.

M5P4: Students will make connections among mathematical ideas and to other disciplines.

M5P5: Students will represent mathematics in multiple ways.

DANCE

GRADE 3

D3FD.1: Identifies and demonstrates movement elements, skills, and terminology in dance

D3FD.2: Understands and models dance etiquette as a classroom participant, performer, and observer

D3CO.4: Demonstrates an understanding of dance as it relates to other areas of knowledge

D3CR.2: Demonstrates an understanding of dance as a way to communicate meaning

GRADE 4

D4FD.1: Technique - Identifies and demonstrates movement elements, skills, and terminology in dance

D4FD.2: Understands and models dance etiquette as a classroom participant, performer, and observer

D4CO.4: Demonstrates an understanding of dance as it relates to other areas of knowledge

GRADE 5

D5FD.1: Identifies and demonstrates movement elements, skills, and terminology in dance

D5FD.2: Understands and models dance etiquette as a classroom participant, performer, and observer

D5CR.2: Demonstrates an understanding dance as a way to communicate meaning

D5CO.4: Demonstrates an understanding of dance as it relates to other areas of knowledge

National Standards

DANCE

Standard 4: Applying and demonstrating critical and creative thinking skills in dance

Standard 7: Making connections between dance and other disciplines