

Puzzling Through Math

Fourth Grade + Math and Dance

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CORE SUBJECT AREA

Math

ART FORM + ELEMENTS

Dance

Body

Action

Space

Energy

MSCCR STANDARDS

6.EE.A.2 - Write, read, and evaluate expressions in which letters stand for numbers.

6.EE.A.3 - Apply the properties of operations to generate equivalent expressions.

MSCCR CREATIVE ARTS STANDARDS

Dance Cr1: Generate and conceptualize artistic ideas.

DA-Cr 1-6b: Explore various methods of movement invention and problem solving that transfer ideas into movement vocabulary. Discuss the effect of methods with others using dance vocabulary.

DURATION

45-60 Minutes

OBJECTIVES

The students will learn to read, write, and solve expressions involving letters by performing dance movements. The dance movements will represent operations being performed.

MATERIALS NEEDED

Open space

A series of math expression word problems

Pencils

Paper

Dance element poster

VOCABULARY

Expression, Evaluate, Exponents, Operations, Equivalent, Distributive, Associative, Commutative, Multiplicative Inverse, Dance, Movement, Line, Shape, Space

RECOMMENDED RESOURCES

Posters that show different dance moves.

LESSON SEQUENCE

Provide students with any word problem that uses expressions with letters as substitutes for numbers. Give them 5 minutes to work through the problem.

Engagement:

Allow the students to turn and talk to their peers about their solutions for 3 minutes. They can use this opportunity to compare solutions or for help in solving the expression if they struggled on their own.

As a class, share out the solutions for the expression, as well as the methods used to solve them. For each solution, ask students to think about a way each step could be shown through a movement. Then, string together the movements to create a movement solution sequence. Explore a variety of uses of line, shape, and space in their movements.

Group the students up and engage students by providing each group with a new math expression using letters as substitutes for numbers. Each group is also presented with a type of dance element, such as line, shape, space, or

energy. They must solve their expression and present their solution in a step-by-step sequence using only the element they have been assigned.

EXTENDED LEARNING ACTIVITIES

Let each individual group member come up with their own expression and swap a partner. The partner will then create a dance solution and present it to his/her expression maker.

SOURCES

<https://educationcloset/2014/07/10/puzzling-through-math-arts-integration-lesson>

TIPS + FREQUENTLY ASKED QUESTIONS

For an assessment:

Have students create their own word problem using a dance sequence of movements. When they present their sequenced expression, the rest of the students in the class must solve the expression and present their answers as a related dance movement (ie. if zig-zag lines were used in the expression, zig zag lines must be used in the solution).