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| **Grade** | **Content Areas Being Integrated** |
| *6th* | *DANCE/MATH*  *Mathematical Reasoning and the Creative Process* |

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|  | **Arts Discipline** | **Other Content Area** |
| **Standards**  **Addressed in the Integrated Lesson/Activity** | *2.1 Invent multiple possibilities to solve a given movement problem and develop the material into a short study.* | *Mathematical Reasoning: 1.3 Determine when and how to*  *break a problem into simpler parts.*  *2.4 Use a variety of methods, such as words, numbers, symbols,charts, graphs, tables, diagrams, and models to explainmathematical reasoning.* |
| **Student Objectives in Each Discipline** | *Students will be able to 1) create a short dance study with a partner based on multiple possibilities for meeting and parting; 2) chart the various movement possibilities using any of a number of methods (e.g., grid, chart) as a part of the creative process; and 3) explain their process to others.* | *Students will be able to use mathematical reasoning skills to solve a complex problem, and explain the way in which they reached their answer using any of a variety of methods (e.g., words, charts, numbers, tables).* |

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| **Integrated Student Objective** | **What is the objective of the integrated activity? Look at connections being made between the two content areas.**  *Students will be able to solve a given math and a given choreographic problem, and compare the processes.* |
| **Essential Question** | **What is the question you want the students to be able to answer at the end of this lesson?**  *Why is it critical for mathematicians and choreographers to master problem-solving skills?* |

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| **Materials/Resources** |
| *• Large, clean space*  *• CD player, various musical selections for exploration/improvisation*  *• Chart paper* |

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| **Lesson/Activity Description** |
| ***Student Engagement(5-10 minutes****)*  *1. Discuss the mathematical reasoning process (e.g., that students need to make decisions about how to approach problems,and use strategies, skills, and concepts to help them find the solutions).*  *2. Discuss the creative process (e.g., exploration, improvisation, movement choice and development)*  *3. Compare and contrast the mathematical reasoning process and the creative process.*  *4. Assign a specific math problem, which requires students to use the mathematical reasoning process. Ask them to explain their*  *reasoning process using words, numbers, symbols, charts, graphs, tables, diagrams or models. Share as a class or in small groups.*  ***Aesthetic Exploration (10 minutes)***  *5. Ask students to choose a partner. As a class, explore various ways to meet and part. Use concepts of body, space, time and force to*  *cue and uncover multiple movement possibilities (e.g., travel quickly on straight pathway to meet your partner, move slowly*  *away on a curving pathway; move smoothly towards your partner, percussively away, etc.).*  *6. Ask students to continue exploring with their partner to find multiple possibilities for meeting and parting. Instruct them to*  *use a grid, table, diagram or other graphic means of organizing and recording possibilities.*  ***Creative Expression(30 minutes)***  *7. Ask students to make movement choices from the possibilities explored and recorded, and to develop them into a short*  *movement study with a clear beginning and ending.*  *8. Practice and perform for each other. Ask each pair to explain how they made their movement choices for their study and share*  *their grid, table, etc.*  ***Reflection (10 minutes****)*  *9. Revisit the discussion comparing the mathematical reasoning process and the creative process.*  *10. Ask each pair to complete this sentence: “The mathematical reasoning process and the creative process a choreographer uses*  *are similar because....”*  ***Connections:*** *Compare and contrast to other processes used in school (e.g., writing process and scientific process).*  ***Extensions:*** *Create a “Chance Dance” and relate it to experimental probabilities in math.*  ***Differentiation:*** *In finding multiple possibilities for “meeting and parting,” give the students a pre-made grid with movement possibilities for“meeting” listed across the top, and possibilities for “parting” listed down the side. Let them make choices from matching possibilities on the grid.* |