

**LineUp With Math™ Alignment to
Nevada Mathematics Process Standards
February 25, 2003 Edition**

Process Standard 6.0: Problem Solving

Students will develop their ability to solve problems by engaging in developmentally appropriate problem solving opportunities in which there is a need to use various approaches to investigate and understand mathematical concepts in order to: formulate their own problems; find solutions to problems from everyday situations; develop and apply strategies to solve a wide variety of problems; and integrate mathematical reasoning, communication and connections.

Process Standard

LineUp With Math™ Activities

6.1 Select, modify, develop, and apply strategies to solve a variety of mathematical and practical problems and to investigate and understand mathematical concepts.

--Use an interactive simulator plus calculation worksheets to model and resolve air traffic control conflicts.

--Choose and apply a variety of strategies to optimize the solution of air traffic control conflicts.

6.5 Verify, interpret, and evaluate results with respect to the original problem situation, determining an efficient **strategy** for the given situation.

--Use an interactive simulator plus calculation worksheets to model and resolve air traffic control conflicts.

--Explore and apply a variety of strategies to optimize the solution of air traffic control conflicts.

6.6 Try more than one strategy when the first strategy proves to be unproductive.

--Choose and apply a variety of strategies to optimize the solution of air traffic control conflicts.

6.7 Apply multi-step, integrated, mathematical problem-solving strategies, persisting until a solution is found or until it is clear that no solution exists.

--Explore and apply a variety of strategies to optimize the solution of air traffic control conflicts.

6.9 Generalize solutions and strategies from earlier problems to new problem situations.

--Choose and apply a variety of strategies to optimize the solution of air traffic control conflicts.

6.10 Interpret and solve a variety of mathematical problems by paraphrasing, identifying necessary and extraneous information, selecting and justifying efficient methods and/or strategies, and ensuring the answer is reasonable.

--Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios.

--Choose and apply a variety of strategies to optimize the solution of air traffic control conflicts.

Process Standard 7.0: Mathematical Communication

Students will develop their ability to communicate mathematically by solving problems in which there is a need to obtain information from the real world through reading, listening, and observing in order to: translate this information into a mathematical language and symbols; process this information mathematically; and present results in written, oral and visual formats.

Process Standard	LineUp With Math™ Activities
7.1 Discuss and exchange ideas about mathematics as a part of learning.	--Predict and resolve aircraft conflicts and explain results of mathematical calculations and simulations.
7.2 Use inquiry techniques (e.g. discussion, questioning, research, data gathering) to solve mathematical problems.	--Use an interactive simulator plus calculation worksheets to model and resolve air traffic control conflicts. --Identify and resolve distance, rate, time conflicts in air traffic control problems by varying plane speeds or changing plane routes.
7.8 Use physical material, diagrams, and tables to represent and then communicate mathematical ideas through oral, verbal, and written formats.	--Use an interactive simulator plus calculation worksheets to model and resolve air traffic control conflicts.
7.11 Make conjectures and present arguments in discussions of mathematical ideas.	--Predict and resolve aircraft conflicts and explain results of mathematical calculations and simulations.
7.12 Explain and justify thinking about mathematical ideas and solutions.	--Predict and resolve aircraft conflicts and explain results of mathematical calculations and simulations.
7.15 Use everyday language to explain thinking about strategies and solutions to mathematical problems.	--Predict and resolve aircraft conflicts and explain results of mathematical calculations and simulations.
7.16 Express mathematical ideas and use them to define, compare, and solve problems orally and in writing.	--Predict and resolve aircraft conflicts and explain results of mathematical calculations and simulations.
7.17 Use mathematical notation to communicate and explain mathematical situations.	--Use an interactive simulator plus calculation worksheets to model and resolve air traffic control conflicts.

Process Standard 8.0: Mathematical Reasoning

Student will develop their ability to reason mathematically by solving problems in which there is a need to investigate significant mathematical ideas and construct their own learning in all content areas in order to justify their thinking; reinforce and extend their logical reasoning abilities; reflect on and clarify their own thinking; and ask questions to extend their thinking.

Process Standard	LineUp With Math™ Activities
8.2 Justify answers and the steps taken to solve problems, with and without manipulatives and physical models.	--Use an interactive simulator plus calculation worksheets to model and resolve air traffic control conflicts.
8.4 Use patterns and relationships to analyze mathematical situations; draw logical conclusions about mathematical problems.	--Use an interactive simulator plus calculation worksheets to model and resolve air traffic control conflicts. --Identify and resolve distance, rate, time conflicts in air traffic control problems by varying plane speeds or changing plane routes.

Process Standard 9.0: Mathematical Connections

Students will develop the ability to make mathematical connections by solving problems in which there is a need to view mathematics as an integrated whole, identifying relationships between context strands, and integrating mathematics with other disciplines, allowing the flexibility to approach problems in a variety of ways within and beyond the field of mathematics.

Process Standard	LineUp With Math™ Activities
9.5 Identify practical applications of mathematical principles that can be applied to other disciplines.	--Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios.
9.7 Apply mathematical thinking and modeling to solve problems that arise in other disciplines (e.g. rhythm in music and motion in science).	--Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios.