

***FlyBy Math™* Alignment**
Minnesota Academic Standards
Mathematics

Strand I. MATHEMATICAL REASONING

Standard: Apply skills of mathematical representation, communication and reasoning throughout the remaining four content strands.

Benchmarks	<i>FlyBy Math™</i> Activities
1. Assess the reasonableness of a solution by comparing the solution to appropriate graphical or numerical estimates or by recognizing the feasibility of a solution in a given context.	--Predict outcomes and explain results of mathematical models and experiments.
2. Appropriately use examples and counterexamples to make and test conjectures, justify solutions and explain results.	--Explain and justify solutions regarding the motion of two airplanes using the results of plotting points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system. --Predict outcomes and explain results of mathematical models and experiments.
3. Translate a problem described verbally or by tables, diagrams or graphs, into suitable mathematical language, solve the problem mathematically and interpret the result in the original context.	--Use tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes. --Explain and justify solutions regarding the motion of two airplanes using the results of plotting points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system.
4. Support mathematical results by explaining why the steps in a solution are valid and why a particular solution method is appropriate.	--Explain and justify solutions regarding the motion of two airplanes using the results of plotting points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system.

Strand III. PATTERNS, FUNCTIONS AND ALGEBRA

Sub-Strand A. Patterns and Functions

Standard: Understand and describe progressions. Use graphs and tables to solve real-world and mathematical problems.

Benchmarks	<i>FlyBy Math™</i> Activities
2. Represent quantitative relationships graphically and use the graphs to solve real-world and mathematical problems.	--Represent distance, speed, and time relationship for constant speed cases using tables, bar graphs, line graphs, equations, and a Cartesian coordinate system. --Use tables, bar graphs, line graphs, equations, and a Cartesian coordinate system to draw conclusions.

<p>3. Generate a table of values from a formula and graph the resulting ordered pairs on a grid.</p>	<p>--Represent distance, speed, and time relationship for constant speed cases using linear equations and a Cartesian coordinate system.</p> <p>--Use the distance-rate-time formula to predict and analyze aircraft conflicts.</p>
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Sub-Strand B. Algebra (Algebraic Thinking)

Standard: Use algebraic operations to generate equivalent expressions, and use proportional reasoning to solve real-world and mathematical problems. Demonstrate the ability to manipulate an equation by applying arithmetic operations to both sides to maintain equivalence.

Benchmarks	FlyBy Math™ Activities
<p>2. Use simple formulas with more than one variable to solve real-world and mathematical problems.</p>	<p>--Use the distance-rate-time formula to predict and analyze aircraft conflicts.</p>
<p>3. Use proportions and percents with one unknown quantity to solve real-world and mathematical problems.</p>	<p>--Use graphs to compare airspace scenarios for both the same and different starting conditions and the same and different constant (fixed) rates.</p>