

LineUp With Math™ Alignment
North Dakota Mathematics Content and Achievement Standards
April 2005

Standard 1: Number and Operation

Students understand and use basic and advanced concepts of number and number systems.

COMPUTATIONAL FLUENCY AND ESTIMATION

Benchmark Expectations

9-10.1.8. Apply estimation skills to predict realistic solutions to problems.

LineUp With Math™ Activities

--Predict and resolve aircraft conflicts and explain results of mathematical calculations and simulations.

9-10.1.10. Explain the reasonableness of a problem's solution and the process used to obtain it.

--Predict and resolve aircraft conflicts and explain results of mathematical calculations and simulations.

Standard 2: Geometry and Spatial Sense

Student understands and applies geometric concepts and spatial relationships to represent and solve problems in mathematical and nonmathematical situations.

VISUALIZATION, SPATIAL REASONING, AND GEOMETRIC MODELING

Benchmark Expectations

9-10.2.11. Use geometric models to find solutions to problems in mathematics and other disciplines; e.g., art and architecture.

LineUp With Math™ Activities

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

-- Predict and plot the relative motion of two or more airplanes on given paths.

Standard 4: Measurement

Students use concepts and tools of measurement to describe and quantify the world.

MEASURABLE ATTRIBUTES, MEASUREMENT SYSTEMS AND UNITS

Benchmark Expectations

9-10.4.1. Select appropriate units and scales for problem situations involving measurement.

LineUp With Math™ Activities

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

MEASUREMENT TOOLS, TECHNIQUES, AND FORMULAS

Benchmark Expectations

9-10.4.6. Employ estimation techniques to evaluate reasonableness of results in measurement situations.

LineUp With Math™ Activities

--Predict and resolve aircraft conflicts and explain results of mathematical calculations and simulations.

Standard 5: Algebra, Functions and Patterns

Students use algebraic concepts, functions, patterns, and relationships to solve problems.

RATES OF CHANGE

Benchmark Expectations

9-10.5.15. Approximate and interpret rates of change from graphical and numerical data

LineUp With Math™ Activities

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

--Identify and resolve distance, rate, time conflicts in air traffic control problems by varying plane speeds or changing plane routes.