

Smart Skies**National Standards**

Grades 3 - 5 Mathematics

Source: NCTM National Standards Mathematics 2000

Lesson/Activity	Grades 3 - 5 Mathematics Standards
Fly by Math	describe location and movement using common language and geometric vocabulary;
Fly by Math	make and use coordinate systems to specify locations and to describe paths;
Fly by Math	select and apply appropriate standard units and tools to measure length, area, volume, weight, time, temperature, and the size of angles;
Fly by Math	design investigations to address a question and consider how data-collection methods affect the nature of the data set;
Fly by Math	collect data using observations, surveys, and experiments;
Fly by Math	recognize the differences in representing categorical and numerical data.
Fly by Math	compare different representations of the same data and evaluate how well each representation shows important aspects of the data.
Line Up with Math	investigate how a change in one variable relates to a change in a second variable;
Line Up with Math	identify and describe situations with constant or varying rates of change and compare them.
Line Up with Math	find the distance between points along horizontal and vertical lines of a coordinate system.
Line Up with Math	understand the need for measuring with standard units and become familiar with standard units in the customary and metric systems;
Line Up with Math	understand that measurements are approximations and how differences in units affect precision;
Line Up with Math	explore what happens to measurements of a two-dimensional shape such as its perimeter and area when the shape is changed in some way.
Line Up with Math	select and apply appropriate standard units and tools to measure length, area, volume, weight, time, temperature, and the size of angles;

Smart Skies

National Standards

Grades 6 – 8 Mathematics

Source: NCTM National Standards Mathematics 2000

Lesson/Activity	Grades 6 - 8 Mathematics Standards
Fly by Math	solve simple problems involving rates and derived measurements for such attributes as velocity and density.
Fly by Math	formulate questions, design studies, and collect data about a characteristic shared by two populations or different characteristics within one population;
Fly by Math	select, create, and use appropriate graphical representations of data, including histograms, box plots, and scatterplots.
Fly by Math	discuss and understand the correspondence between data sets and their graphical representations, especially histograms, stem-and-leaf plots, box plots, and scatterplots.
Line Up with Math	compare and order fractions, decimals, and percents efficiently and find their approximate locations on a number line;
Line Up with Math	use graphs to analyze the nature of changes in quantities in linear relationships.
Line Up with Math	draw geometric objects with specified properties, such as side lengths or angle measures;
Line Up with Math	solve simple problems involving rates and derived measurements for such attributes as velocity and density.

National Standards

Grades 9 - 12 Mathematics

Source: NCTM National Standards Mathematics 2000

Lesson/Activity	Grades 9 - 12 Mathematics Standards
Fly by Math	understand the differences among various kinds of studies and which types of inferences can legitimately be drawn from each;
Fly by Math	understand histograms, parallel box plots, and scatterplots and use them to display data;
Fly by Math	for univariate measurement data, be able to display the distribution, describe its shape, and select and calculate summary statistics;
Fly by Math	display and discuss bivariate data where at least one variable is categorical;
Fly by Math	evaluate published reports that are based on data by examining the design of the study, the appropriateness of the data analysis, and the validity of conclusions;