

Core Content for Assessment: Data Analysis and Probability

Draft August 2005

End of Primary	4th Grade	5th Grade	6th Grade	7th Grade	8th Grade	11th Grade
Data Representations						
<p>MA-EP-4.1.1 Students will analyze and make inferences from data displays (drawings, tables/charts, tally tables, pictographs, bar graphs, circle graphs with two or three sectors, line plots, two-circle Venn diagrams).</p>	<p>MA-04-4.1.1 Students will analyze and make inferences from data displays (drawings, tables/charts, tally tables, pictographs, bar graphs, circle graphs, line plots, Venn diagrams).</p>	<p>MA-05-4.1.1 Students will analyze and make inferences from data displays (drawings, tables/charts, tally tables, pictographs, bar graphs, circle graphs, line plots, Venn diagrams, line graphs).</p>	<p>MA-06-4.1.1 Students will analyze and make inferences from data displays (drawings, tables/charts, pictographs, bar graphs, circle graphs, line plots, Venn diagrams, line graphs, stem-and-leaf plots).</p>	<p>MA-07-4.1.1 Students will analyze and make inferences from data displays (drawings, tables/charts, pictographs, bar graphs, circle graphs, line plots, Venn diagrams, line graphs, stem-and-leaf plots, scatter plots).</p>	<p>MA-08-4.1.1 Students will analyze and make inferences from data displays (drawings, tables/charts, pictographs, bar graphs, circle graphs, line plots, Venn diagrams, line graphs, stem-and-leaf plots, scatter plots, histograms, box-and-whiskers plots).</p>	<p>MA-H11-4.1.1 Students will analyze and make inferences from a set of data with no more than two variables, and will analyze situations for the use and misuse of data representations.</p>
	<p>MA-04-4.1.2 Students will construct data displays (pictographs, bar graphs, line plots, Venn diagrams, tables).</p>	<p>MA-05-4.1.2 Students will construct data displays (pictographs, bar graphs, line plots, line graphs, Venn diagrams, tables).</p>	<p>MA-06-4.1.2 Students will construct data displays (bar graphs, line plots, Venn diagrams, tables, line graphs), and will explain why the type of display is appropriate for the data.</p>	<p>MA-07-4.1.2 Students will construct data displays (bar graphs, line plots, Venn diagrams, tables, line graphs, stem-and-leaf plots), and will explain why the type of display is appropriate for the data.</p>	<p>MA-08-4.1.2 Students will:</p> <ul style="list-style-type: none"> • Construct data displays (Venn diagrams, tables, line graphs, stem-and-leaf plots, circle graphs, scatter plots); • Will explain why the type of display is appropriate for the data; and • Will explain how misleading representations affect interpretations and conclusions about data (e.g., changing the scale on a graph). 	<p>MA-H11-4.1.2 Students will construct data displays for data with no more than two variables.</p>
Characteristics of Data Sets						
		<p>MA-05-4.2.1 Students will determine and apply the mean, median, mode (for a data set with no more than one mode), and range of a set of data.</p>	<p>MA-06-4.2.1 Students will determine and apply the mean, median, mode, and range of a set of data.</p>	<p>MA-07-4.2.1 Students will determine the mean, median, mode, and range of a set of data, and will recognize clusters, gaps, and outliers within the data.</p>	<p>MA-08-4.2.1 Students will:</p> <ul style="list-style-type: none"> • Determine the mean, median, mode, and range of a set of data; • Will identify clusters, gaps, and outliers; and • Will apply these concepts to compare sets of data. 	<p>MA-H11-4.2.1 Students will describe and compare data distributions and make inferences from the data based on the shapes of graphs, measures of center (mean, median, mode) and measures of spread (range, standard deviation).</p>
						<p>MA-H11-4.2.2 Students will:</p> <ul style="list-style-type: none"> • identify an appropriate curve of best fit (linear, quadratic, exponential) for a set of two-variable data; • determine a line of best fit for a set of two-variable data; and • apply line of best fit equations to make predictions within and beyond a given set of data.
Experiments and Samples						
						<p>MA-H11-4.3.1 Students will recognize inappropriate strategies for data gathering (e.g., non-random sampling, polling only a specific group of people, using limited or extremely small sample sizes, bias issues) and explain why these strategies can lead to inaccurate inferences.</p>
Probability						
	<p>MA-04-4.4.1 Students will determine all possible outcomes of an activity with up to six possible outcomes.</p>	<p>MA-05-4.4.1 Students will determine all possible outcomes of an activity with up to 12 possible outcomes.</p>	<p>MA-06-4.4.1 Students will describe or determine (e.g., tables, tree diagrams) the sample space of an event.</p>	<p>MA-07-4.4.1 Students will apply counting techniques to determine the size of a sample space.</p>	<p>MA-08-4.4.1 Students will apply counting techniques to determine the size of a sample space.</p>	<p>MA-H11-4.4.1 Students will:</p> <ul style="list-style-type: none"> • determine theoretical and experimental (from given data) probabilities; • make predictions and draw inferences from probabilities; • compare theoretical and experimental probabilities; and • determine probabilities involving replacement and non-replacement.
	<p>MA-04-4.4.2 Students will determine the likelihood of an event, expressed as a fraction, and the fairness of simple probability games.</p>	<p>MA-05-4.4.2 Students will determine the likelihood of an event, expressed as a fraction, and the fairness of simple probability games.</p>	<p>MA-06-4.4.2 Students will determine simple probabilities based on the results of an experiment and will make inferences based on the data.</p>	<p>MA-07-4.4.2 Students will:</p> <ul style="list-style-type: none"> • Determine theoretical probabilities of simple events; • Determine probabilities based on the results of an experiment; and • Make inferences from probability data. 	<p>MA-08-4.4.2 Students will:</p> <ul style="list-style-type: none"> • Determine theoretical probabilities of simple events; • Determine probabilities based on the results of an experiment; and • Make inferences from probability data. 	