

Statistical Reasoning Teaching & Learning Framework

Semester 1						Semester 2				
Unit 1 3 weeks	Unit 2 3 weeks	Unit 3 3 weeks	Unit 4 3 weeks	Unit 5 3 weeks	Unit 6 3 weeks	Unit 7 3 weeks	Unit 8 3 weeks	Unit 9 3 weeks	Unit 10 3 weeks	Unit 11 3 weeks
Statistical Problem Solving Process	Formulating Questions	Collecting Data	The Role of Randomness	Analyzing Data	Comparing Distributions	Bivariate Comparisons	Interpreting Results & Inference	Simulations & Margin of Error	Simulations & P-Value	Creating Experiments & Culminating Project
<p>MSRFQ1 Students will apply the statistical method to real-world situations; MSRCD3. Students will distinguish between the three types of study designs for collecting data (sample survey, experiment, and observational study) and will know the scope of the interpretation for each design type.</p>	<p>MSRFQ2. Students will identify whether the data are categorical or quantitative (numerical).</p>	<p>MSRCD1. Students will distinguish between a population distribution, a sample data distribution, and a sampling distribution.</p>	<p>MSRCD2. Students will understand that randomness should be incorporated into a sampling or experimental procedure. MSRCD4. Students will distinguish between the role of randomness and the role of sample size with respect to using a statistic from a sample to estimate a population parameter.</p>	<p>MSRAD1. Students will use distributions to identify the key features of the data collected.</p>	<p>MSRAD2. Students will use distributions to compare two or more groups.</p>	<p>MSRAD3. Students will determine if an association exists between two variables (pattern or trend in bivariate data) and use values of one variable to predict values of another variable.</p>	<p>MSRIR1. Students will ask if the difference between two sample proportions or two sample means is due to random variation or if the difference is significant.</p>	<p>MSRIR2. Students will understand that when randomness is incorporated into a sampling or experimental procedure, probability provides a way to describe the 'long-run' behavior of a statistic as described by its sampling distribution.</p>	<p>MSRIR2. Students will understand that when randomness is incorporated into a sampling or experimental procedure, probability provides a way to describe the 'long-run' behavior of a statistic as described by its sampling distribution.</p>	<p>All standards for the course</p>

These units were written to build upon concepts from prior units, so later units contain tasks that depend upon the concepts addressed in earlier units.
All units will include the Mathematical Practices and indicate skills to maintain

NOTE: Mathematical standards are interwoven and should be addressed throughout the year in as many different units and tasks as possible in order to stress the natural connections that exist among mathematical topics.

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Block Schedule

Unit 1 1.5 weeks	Unit 2 1.5 weeks	Unit 3 1.5 weeks	Unit 4 1.5 weeks	Unit 5 1.5 weeks	Unit 6 1.5 weeks	Unit 7 1.5 weeks	Unit 8 1.5 weeks	Unit 9 1.5 weeks	Unit 10 1.5 weeks	Unit 11 1.5 weeks
Statistical Problem Solving Process	Formulating Questions	Collecting Data	The Role of Randomness	Analyzing Data	Comparing Distributions	Bivariate Comparisons	Interpreting Results & Inference	Simulations & Margin of Error	Simulations & P-Value	Creating Experiments & Culminating Project
MSRFQ1 Students will apply the statistical method to real-world situations; MSRCD3. Students will distinguish between the three types of study designs for collecting data (sample survey, experiment, and observational study) and will know the scope of the interpretation for each design type.	MSRFQ2. Students will identify whether the data are categorical or quantitative (numerical).	MSRCD1. Students will distinguish between a population distribution, a sample data distribution, and a sampling distribution.	MSRCD2. Students will understand that randomness should be incorporated into a sampling or experimental procedure. MSRCD4. Students will distinguish between the role of randomness and the role of sample size with respect to using a statistic from a sample to estimate a population parameter.	MSRAD1. Students will use distributions to identify the key features of the data collected.	MSRAD2. Students will use distributions to compare two or more groups.	MSRAD3. Students will determine if an association exists between two variables (pattern or trend in bivariate data) and use values of one variable to predict values of another variable.	MSRIR1. Students will ask if the difference between two sample proportions or two sample means is due to random variation or if the difference is significant.	MSRIR2. Students will understand that when randomness is incorporated into a sampling or experimental procedure, probability provides a way to describe the 'long-run' behavior of a statistic as described by its sampling distribution.	MSRIR2. Students will understand that when randomness is incorporated into a sampling or experimental procedure, probability provides a way to describe the 'long-run' behavior of a statistic as described by its sampling distribution.	All standards for the course

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