Reading Public Schools

Instilling a joy of learning and inspiring the innovative leaders of tomorrow

Course Description

As stated by the College Board, Advanced Placement Statistics affords students the opportunity to learn about the major concepts and tools used for collecting, analyzing, and drawing conclusions from data. They will explore statistics through discussion and activities, and they will design surveys and experiments. This course is the equivalent of a one-semester, introductory, non-calculus-based college course in statistics. More information about the requirements of the College Board AP Calculus AB course can be found at: https://apcentral.collegeboard.org/courses/ap-statistics.

Content Standards

BIG IDEA 1: VARIATION AND DISTRIBUTION

The distribution of measures for individuals within a sample or population describes variation. The value of a statistic varies from sample to sample. How can we determine whether differences between measures represent random variation or meaningful distinctions? Statistical methods based on probabilistic reasoning provide the basis for shared understandings about variation and about the likelihood that variation between and among measures, samples, and populations is random or meaningful.

BIG IDEA 2: PATTERNS AND UNCERTAINTY

Statistical tools allow us to represent and describe patterns in data and to classify departures from patterns. Simulation and probabilistic reasoning allow us to anticipate patterns in data and to determine the likelihood of errors in inference.

BIG IDEA 3: DATA-BASED PREDICTIONS, DECISIONS, AND CONCLUSIONS

Data-based regression models describe relationships between variables and are a tool for making predictions for

Course Skills

1. **Selecting Statistical Methods—**Select methods for collecting and/or analyzing data for statistical inference.

2. **Data Analysis**—Describe patterns, trends, associations, and relationships in data.

3. **Using Probability and Simulations**—Explore random phenomena.

4. **Statistical Argumentation** —Develop an explanation or justify a conclusion using evidence from data, definitions, or statistical inference.

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Math Curriculum Guide Overview

Curriculum Guide	Curriculum guides are public documents aligned with the Massachusetts Department of Education Curriculum Frameworks. They focus on the set of standards that students will learn within certain disciplines at appropriate grade levels. Each area of the curriculum is divided into general strands (broad categories) under which the standards fall. When we discuss "standards-based education" we mean that students are measured against their proficiency and growth towards meeting these standards. Curriculum Guides are intended for teachers, parents, and the wider school community as an overview document of the course of study for the year.
Content Standards	The Content Standards for AP Calculus AB are described at length in the College Board website. It can be found at: https://apcentral.collegeboard.org/courses/ap-statistics
Mathematical Practice Standards	Mathematical Practice Standards are a set of skills/behaviors that are replicated in grades preK-12. These standards describe ways in which students engage with the mathematical content and the level of application grows increasingly complex as students progress vertically throughout their education.
Essential Questions	Essential questions are questions that are not answerable with an easy answer or a simple instruction. The purpose of essential questions is to provide opportunities for inquiry into the learning and act as an umbrella to anchor the unit/lesson.
Key Activities	Key Activities identified in Curriculum Guides are not intended to be exhaustive, nor are they intended to be prescriptive. The activities identified may function as a menu of curriculum resources from which educators identify the most appropriate tools to utilize in their classrooms.