AP Statistics Syllabus
Mrs. Novy

About the AP Statistics Course

The AP Statistics course introduces students to the major concepts and tools for collecting, analyzing, and drawing conclusions from data. There are four themes evident in the content, skills, and assessment in the AP Statistics course: exploring data, sampling and experimentation, probability and simulation, and statistical inference. Students use technology, investigations, problem solving, and writing as they build conceptual understanding.

Big Ideas

The big ideas serve as the foundation of the course and allow students to create meaningful connections among concepts. They are often overarching concepts or themes that become threads that run throughout the course. Revisiting the big ideas and applying them in a variety of contexts allows students to develop deeper conceptual understanding. Below are the big ideas of the course and a brief description of each.

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?

Big Idea II: 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 III: Data-based predictions, decisions and conclusions

Data based regression models describe relationships between variables and are a tool for making predictions for values of a response variable. Collecting data using random sampling or randomized experimental design means that findings may be generalized to the part of the population from which the selection was made. Statistical inference allows us to make data based decisions.

College Course Equivalent

The AP Statistics course is equivalent to a one-semester, introductory, non-calculus-based college course in statistics.

Prerequisites

The AP Statistics course is an excellent option for any secondary school student who has successfully completed a second-year course in algebra and who possesses sufficient mathematical maturity and quantitative reasoning ability. Because second-year algebra is the prerequisite course, AP Statistics is usually taken in either the junior or senior year. Decisions about whether to take AP Statistics and when to take it depend on a student's plans:

- Students planning to take a science course in their senior year will benefit greatly from taking AP Statistics in their junior year
- For students who would otherwise take no mathematics in their senior year, AP Statistics allows them to continue to develop their quantitative skills
- Students who wish to leave open the option of taking calculus in college should include precalculus in their high school program and perhaps take AP Statistics concurrently with precalculus
- Students with the appropriate mathematical background are encouraged to take both AP Statistics and AP Calculus in high school

Units

This course is broken into 9 units. Below is a table with the exam weight for each unit on the multiple choice section of the AP Statistics Exam.

Units	*Exam Weighting*
Unit 1: Exploring One – Variable Data	15-23%
Unit 2: Exploring Two-Variable Data	5-7%
Unit 3: Collecting Data	12-15%
Unit 4: Probability, Random Variables, and Probability Distributions	10-20%
Unit 5: Sampling Distributions	7-12%
Unit 6: Inference for categorical Data: Proportions	12-15%
Unit 7: Inference for Quantitative Data: means	10-18%
Unit 8: Inference for Categorical Data: Chi-Square	2-5%
Unit 9: Inference for quantitative slopes	2-5%

Textbook

Bock, David E., Paul F. Velleman, and Richard D. DeVeaux. *Stats: Modeling the World, 5th edition, 2018*. Boston: Pearson/Addison-Wesley.

Materials Needed to be Successful

Bring the following materials to class every day:

- Pencils and erasers
- Highlighters and pens
- Colored pencils
- Lined paper
- Graph paper
- Ruler
- calculator

Notes

Notes will be taken in class almost daily. Notes will not be graded, but keep in mind that taking clean, detailed, organized notes while actively listening to lessons is key to being successful on homework and on quizzes/tests. If a student is absent, it is that students responsibility to copy the notes from one of his or her classmates.

Homework

Every student enrolled in AP Statistics will receive a unique code to register for *mymathlabforschool*. Please note that registration codes will not be passed out until all schedule changes have been finalized. It is important not to lose this code as it cannot be replaced if lost. Once students redeem their unique code, the code will expire and will not work again. Homework assignments will be assigned, submitted, and graded through *mymathlabforschool*. Should any student not have access to a computer/phone/tablet and/or Internet, please contact me.

Mymathlabforschool includes homework help and a pdf version of the class textbook.

Late Homework

Late homework will be accepted up until the day of the unit test for 50% credit. Once the unit test has passed, no more homework submissions for that unit will be taken.

Projects

Approximately two projects will be given each semester. Projects include designing surveys and experiments, collecting data, analyzing data, and interpreting the results. Students must write a formal report of their findings and must use statistical language throughout their report. Students need to include graphs in their project, which must be done with computer software and/or graphing calculators. Students will present their projects. Detailed directions and a rubric for each project will be handed out when it comes closer to the project due dates.

Assessments

Quizzes will be given regularly and will encompass the topics covered during the week. A test will be given at the end of each unit. Each quiz and test is cumulative and will be the same format as the AP exam. If a student is absent on the day of an assessment, a make-up assessment will be taken on the day the student returns to school, **NO EXCEPTIONS.** It is the student's responsibility to request the make-up assessment upon their return to class. If a student fails to take a make-up assessment, a score of zero will be recorded for that assessment. Unless being completed on the computer, all tests and quizzes must be done in **pencil**. Any assessment done in pen will **not** be graded.

Participation

Class activities happen almost daily. Class activities include surveys and experiments, which in turn means students will be working with peers frequently. Active participation is, thus, a class requirement.

Attendance

Students need to be in their seats, quiet, and ready to work when the bell rings. Students not in their seat before the bell rings will be marked tardy. It is the students responsibility to make up work when he or she is absent. It is the students responsibility to read the student handbook and become aware of the rules, guidelines, and consequences for unexcused absences.

Grading

Grades are based upon classwork/homework, projects, and quizzes/tests.

Weighted grading will be used as follows:

Gradebook Category	*Weighted Grade*
Classwork/Homework	10%
Projects	15%
Quizzes/Tests	75%

The grading scale is below:

A	Greater than or equal to 90%
B	Greater than or equal to 80% and less than 90%
C	Greater than or equal to 70% and less than 80%
D	Greater than or equal to 60% and less than 70%
F	Less than 60%

Grades are updated on Aeries weekly. Parents and students are encouraged to check frequently. If students are not happy with their grade, they are encouraged to contact me ASAP for extra help. Do not wait until the end of the semester, when it is often too late to make significant grade changes.

Extra Help

If you feel like you need extra help with the material, I am available before school, at lunch, and after school by appointment.

Contact Information

The best way to contact me is via email.

Email: Brielle_Novy@chino.k12.ca.us

Academic Honesty

Academic cheating will result in a score of **ZERO** on the assignment or assessment. Citizenship and Work Habit marks will also be lowered for the semester report card. If a student is caught cheating, it will also be reported to the assistant principal.

It is important to maintain academic honesty in all coursework**.** It is student's responsibility to read the student handbook to become fully aware of the school philosophy and policy on this subject.

Academic cheating includes, but is not limited to: talking during an assessment, having electronic devices out before, during, or after an assessment, and having any unauthorized materials out or present during an assessment.

Schoolwide Rules

All schoolwide rules are expected to be followed and will be enforced in my classroom:

1. No Hats
2. No Hoods
3. No Cell Phones

It is student's responsibility to read the student handbook to become fully aware of the school philosophy and policy on cell phones.

Classroom Rules

1. Come to class on time with required materials
2. Be respectful and polite to others at all times.
3. Be a mindful learner
4. No food or drink (except water) in the classroom.

Disciplinary Plan

It is important that both the schoolwide and classroom rules be followed, so that there is a positive learning environment for all. The disciplinary plan is as follows:

Positive Consequences	*Negative Consequences*
1. Verbal praise	1. Verbal warning
2. Remain in current seat	2. Seat change
3. Positive home contact	3. Parent contact regarding problem and possible parent teacher conference
4. No detention	4. Detention
5. Good citizenship grade	5. Lower citizenship grade
6. Possible Letter of Recommendation	6. No letter of recommendation

The disciplinary plan can be followed in any order I see fit.

Calculators

Graphing calculators with statistical capabilities are **expected** to be used on both sections of the AP Statistics exam. Scientific nongraphing calculators are permitted if they have the required statistics computational capabilities. Make sure you are using an approved calculator. The list of approved calculators can be found here:

https://apstudents.collegeboard.org/exam-policies-guidelines/calculator-policies

Please note that I use and teach with the TI-84 calculator. Any student with the same calculator will easily be able to follow along with the calculator commands taught in class. Students with other calculators will have to become familiar with their calculators and may have slightly different calculator commands from the ones being taught

It is **crucial** that students bring their own calculator to class every day with fresh batteries and/or a full charge! Calculators are **expected** to be used in class, on homework, and on quizzes/tests.

Course Skills

The AP Statistics course skills describe what a student should be able to do while exploring course concepts. The table that follows presents these skills, which students should develop during the AP Statistics course. These skills form the basis of the tasks on the AP Exam.

Skill Category 1	Skill Category 2	Skill Category 3	Skill Category 4
Selecting Statistical Methods Select methods for collecting and/or analyzing data for statistical inference	**Data Analysis** Describe patterns, trends, associations, and relationships in data	**Using Probability and simulation** Explore random phenomena	**Statistical Argumentation** Develop an explanation or justify a conclusion using evidence from data, definitions, or statistical inference.

AP Exam Overview

The Ap Statistics Exam assesses student understanding of the skills and learning objectives taught throughout the course. The exam is 3 hours long and includes multiple-choice questions and 6 free-response questions.

Section	Question Type	Number of Questions	Exam Weighting	Timing
I	Multiple-Choice questions	40	50%	90 minutes
II	Free response Questions	6		
	Part A: Questions 1-5		37.5%	65 minutes
	Part B: Question 6: Investigative Task		12.5%	25 minutes

All students are strongly encouraged to take the AP exam. There will be extensive review in class prior to the AP exam.