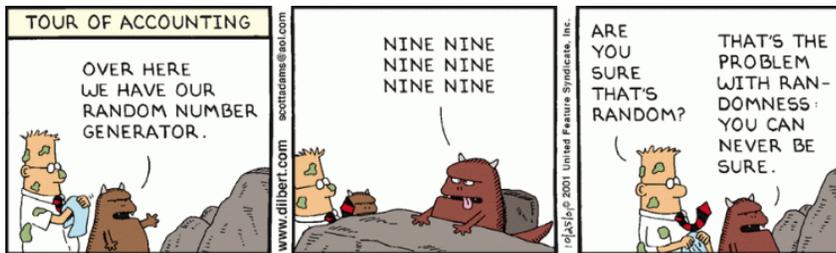


Practical Applications of Statistics in the Work Place And In Everyday Life

We live in an information society; raw data, graphs, charts, rates, percentages, probabilities, averages, forecasts, and trend lines are an inescapable part of our everyday lives. It is hard to pick up a newspaper without finding an article in which a recent study makes a claim about the effect of a food product on people's health. Studies in which people who ate oatmeal had lower cholesterol than those who did not might suggest that those with high cholesterol would be wise to eat oatmeal. In AP Statistics, we learn to examine the details of the study to see if a true experiment was conducted with subjects randomly assigned to treatments, and whether other factors were involved. Other factors include questioning whether the oatmeal really lowered cholesterol or whether the subjects ate oatmeal instead of eating four fried eggs! Would eating cornflakes have had the same effect? Is oatmeal the factor, or is it the change from a high cholesterol breakfast?

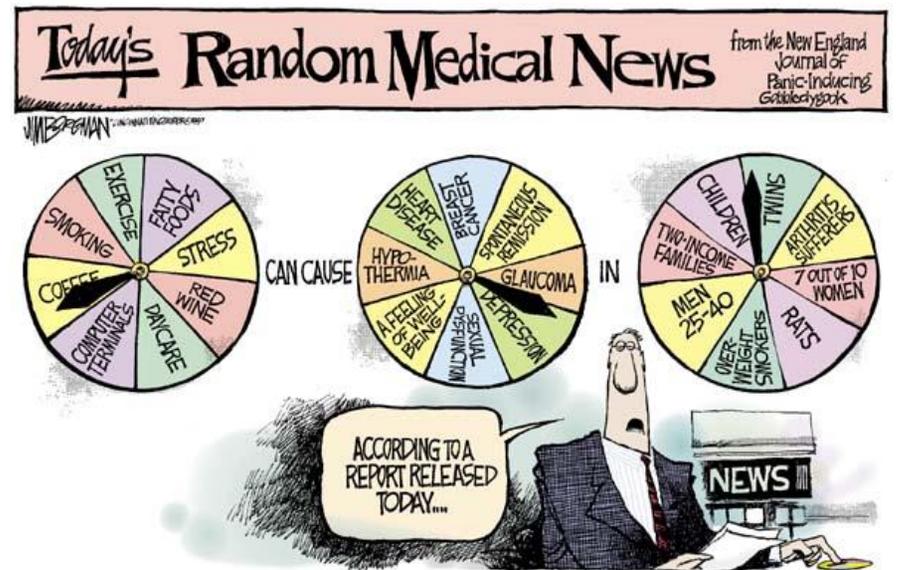


In the work place, statistics is used by many companies. Business decisions are made based on market research. Advertising executives want to know whether a new ad campaign significantly increases sales. Doctors must know reliability of medicine and treatments. Products such as pharmaceuticals require significant evidence of effectiveness and safety. (Examine the literature inserted in any new medicine you take to see the statistical evidence.) Politicians rely on data from polls and public opinion. Courts inquire about statistical significance in hearing class action discrimination cases. (Statistical Significance means that such results are unlikely to occur by mere chance alone.) Any company that expects to obtain a government contract must have strong evidence of a quality control program that implements Statistical Process Control. Statistical literacy is becoming very important in the work place and in society as we are all consumers of goods and services and need to make intelligent choices. Advanced Placement Statistics provides the opportunity for students to learn how to make good decisions with data.

This brochure is based on a similar brochure by Michelle Krummel

Advanced Placement Statistics

at Saginaw High School 2021-2022



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AP Stats FAQ

What is AP Statistics?

AP Stats is a college level introductory course in statistics. You'll learn how to collect, organize, analyze, and interpret data.

Why should I take it?

Statistics is the most widely applicable branch of mathematics. It is used by more people than any other kind of math.

How hard is AP stats?

It's a college course, so expectations are high! You will need to think hard about the concepts. You will write! You won't get a good grade just for showing up.

What is the class like?

We do lots of activities, which normally include food! We will finish the course material by April and spend April reviewing for the AP Exam in mid-May.

Will I need Stats in college?

Probably, Statistics is required for many majors and is strongly recommended for others.

Do you have to be good at math to be successful?

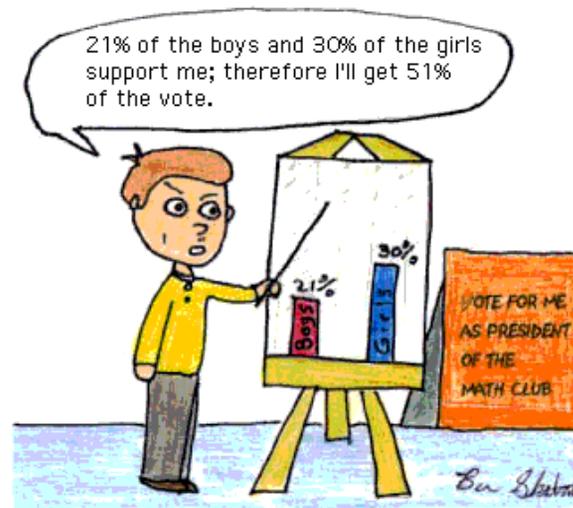
No. The course does not depend on abstract mathematical concepts, but you DO need a strong background and a desire to work hard. Your calculator will do the number crunching, but you have to understand what your calculator says!

Why take Stats at SHS?

At SHS, the course is a full year course, rather than a college semester, so we go at a more reasonable pace.

Who can sign up for Stats?

Technically any student that has a strong background in math can sign up. The math department at SHS only requires passing Algebra II. More importantly though, is the students desire to work hard and come to class prepared daily.



What the Course Covers

The Four Major Components of AP Stats

1. Exploring Data

Students collect and examine data and display patterns that emerge. Data from students in class as well as real world data sets are gathered and used to illustrate concepts.

2. Producing Models Using Probability and Simulation

Students learn to anticipate patterns and produce models for prediction. Students use simulations to estimate probabilities when actual calculations are too complex.

3. Experimental Design

Students design appropriate experiments in order to draw conclusions that can be generalized to the population of interest. Students will also interpret studies and experiments to determine whether the conclusions from the studies warrant considerations

4. Statistical Inference

Students use sample data to make claims about the population parameter, as well as estimating the parameter based on unbiased statistics. They will learn about potential errors that can be made using statistics.