

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 studies. We might question if oatmeal really lowered cholesterol or did the subjects just eat oatmeal instead of their normal breakfast of two fried eggs? Perhaps eating cornflakes would have had the same effect.



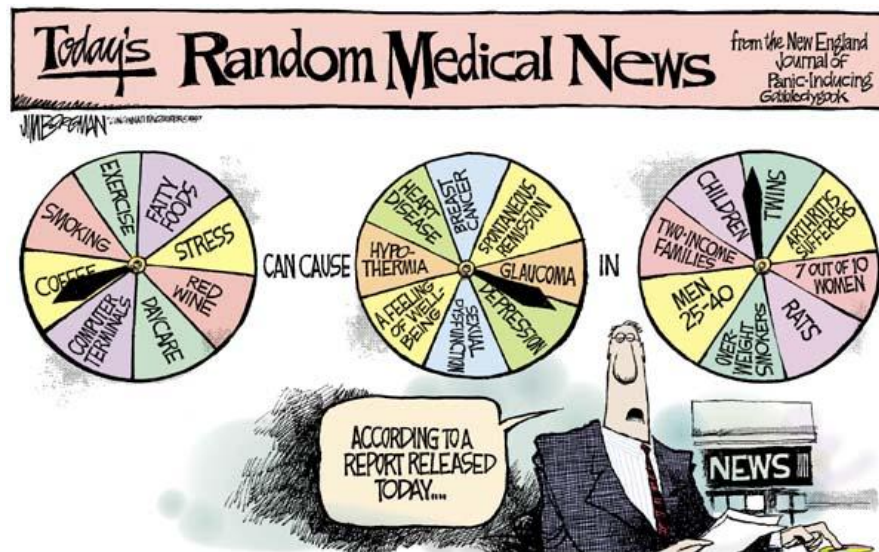
http://www.nearingzero.net/sci_math_and_stats.html

Many **companies** use statistics. **Business** decisions are made based on market research. **Advertising executives** want to know whether a new ad campaign significantly increases sales. **Doctors** must know the reliability of medicine and treatments. Products such as **pharmaceuticals** require significant evidence of effectiveness and safety. **Politicians** rely on data from polls and public opinion. **Courts** inquire about statistical significance in hearing class action discrimination cases. Any company that expects to obtain a **government contract** must have strong evidence of a statistical quality control program. **Statistical literacy** is important 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 of Wilde Lake HS, Columbia, MD.

Advanced Placement Statistics

at NVHS 2010-11



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On the web:
http://mrwaddell.net/ap_statistics.htm

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 the expectations are high. You will need to think hard about the concepts. You'll write – a lot. You won't get a good grade just for showing up. There is plenty of work, yet we don't turn in much of it. You must be a self-motivated scholar. The students who aren't...usually end up not passing the AP exam.

What is class like?

Nearly every day we cover something new. We do go over HW in class, but you are responsible for what we do not go over. Sometimes we do labs – which always seem to involve a food item!

Do you have to be a top rate mathematician?

No. The course does not depend heavily on abstract mathematical concepts, but you DO need a strong background in Algebra 3-4. Our calculators will help us with much of the numeric drudgery inherent in statistics.

Can I take Stats in college?

Yes. Statistics is required for many majors, and strongly recommended for others. At UNR, they require statistics for over 44 different majors. Taking AP Statistics now gives you the opportunity to earn college credit, and saves you approximately \$450 in tuition.

Why take it at NVHS?

At North Valleys, it's a full year course, rather than a college semester, so we go at a more reasonable pace. We have time for a major capstone project after the AP Exam.

Would it be my only math course next year?

It could be. Many students also enroll in a PreCalc or Calculus course and find the combination very 'do-able'. In any case, stats is not really a 'math' course – it's a whole different animal.

Who can sign up?

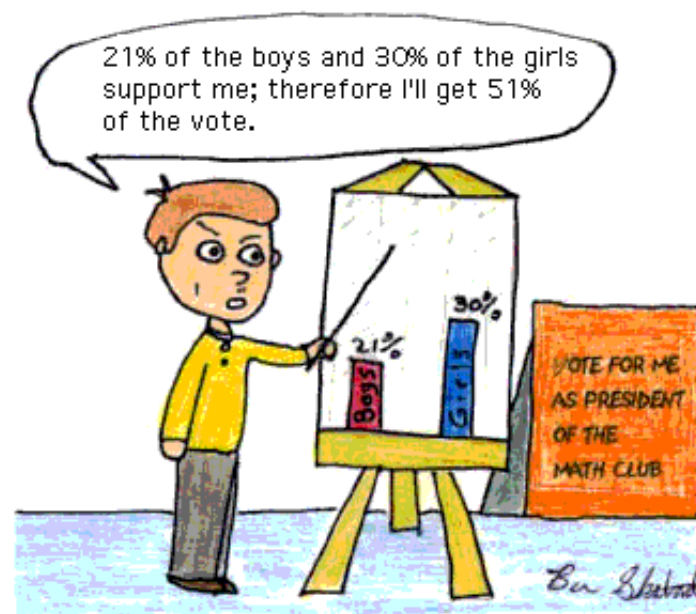
Anyone who has passed Algebra 3-4 is able to enroll. You should have a good background in Algebra 3-4 and have the recommendation of your teacher.

Who does sign up?

The course has typically been about 2/3 seniors, 1/3 juniors, and an occasional sophomore.

Need more info?

See the class website (listed on front) or email/visit Mr. Waddell or Ms. Hair.



<http://iil67babygirl.tripod.com/id1.html>

What the Course Covers The Four Major Components of AP Stat

- 1. 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 consideration.
- 2. Exploring Data**
Students collect and examine data and display the patterns that emerge. Data from students in class as well as real world data sets are gathered and used to illustrate concepts.
- 3. Producing Models Using Probability and Simulation**
Students learn to anticipate patterns and produce models for prediction. Students use simulations to model situations that are not practical to replicate using other methods.
- 4. Statistical Inference**
Students learn what can be generalized about the population. Students also consider how to investigate research questions, design a study, and interpret the results.