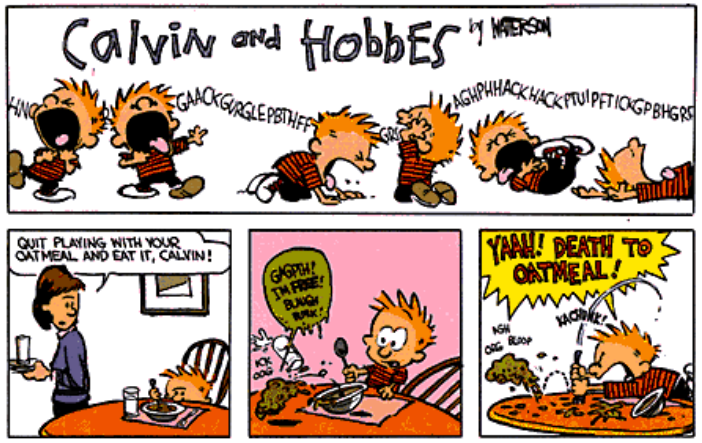
STATISTICS AT BMSS

http://blogs.sd41.bc.ca/mountain-math/

WHAT IS STATISTICS? WHY SHOULD I TAKE IT?

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 Statistics, we learn to examine the details of a 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 and sausages! 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 treatments. Products such as vaccines 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. 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. Our Statistics courses provide the opportunity for students to learn how to make good decisions with data.

WHAT YOU WILL LEARN

THE 4 MAJOR COMPONENTS OF STATISTICS 12 AND ADVANCED PLACEMENT STATISTICS:

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.

MATHEMATICS AT BMSS

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FAQ

Why Should I Take It?
Statistics is the most widely applicable branch of mathematics. You'll never wonder when you'll ever use this stuff! Also, Statistics 12 is now a ministry course and can be used as your senior-level math graduation requirement.

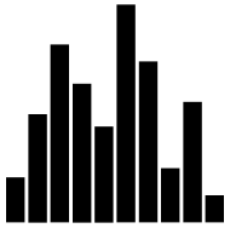
Who Uses Statistics?
Everyone who needs to collect and analyze data needs to understand statistics. That's every branch of science, of course. And it's also important in the social sciences (like psychology, sociology, anthropology), in business and economics, in political science and government, in law, and in medicine. There's a very strong chance you will use statistics in college and in your career.

Would It Be My Only Math Course Next Year?
Most people take Statistics as an elective, in addition to their regular math course (e.g. Foundations 11/12 or Pre-Calculus 11/12). However, the B.C. graduation requirement for math is to complete math 10 and one other math course at the grade 11 or 12 level. Statistics 12 can be used for this requirement.

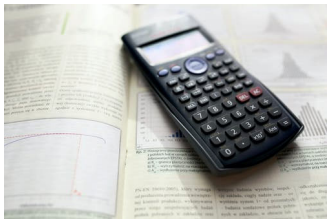
Could I Take Statistics In University?
Yes, and you probably will. Statistics is required for many majors, and strongly recommended for others. Many universities now give students a choice of Statistics or Calculus to fulfill their math requirements.

Then Why Should I Take It In High School?
There are several advantages. Here it's a full year course so you'll have more opportunities to ask questions and really understand the concepts than at university where the class meets only a few times per week for one semester. You will enter university ready to apply your skills in your first semester courses.

Who Can Sign Up?
Anyone who has completed Foundations and Pre-Calculus Math 10 and English 10 is eligible to take AP Statistics or Statistics 12.



STATISTICS 12 VS. ADVANCED PLACEMENT … WHICH SHOULD I TAKE?



At Burnaby Mountain, we offer both courses. If students are interested in taking Statistics, they should think carefully about which course is the right choice for them.

What is Advanced Placement Statistics?
AP Stat is a university level introductory course in statistics with a curriculum prescribed by the College Board. Because it's an AP course, you can earn university credit for this course if you do well on the AP exam.

How is Advanced Placement different from regular Statistics 12
They essentially cover the same topics. However, advanced placement is more rigorous and includes the AP exam so there is less time for projects and fun in-class activities or experiments. AP can also be competitive to get into depending on how many students apply.

How Hard is Advanced Placement?
It's a college course, so the expectations are high. You'll be expected to do homework every day, and not just math problems. There is reading and writing involved. In fact, if you think math is all formulas, equations, and calculations, you'll soon find that this isn't really a math course. It's a course in reading, analyzing, thinking, and writing clearly.

How do I apply for advanced placement and who is selected?
Students interested in AP Statistics should select it during course selection. Admission will be based on teacher recommendation and academic performance. Your commitment to do college-level work and your reading and writing skills are just as important as your math background.