**Good Morning!  Today is Thursday, 10 Aug 2017.**

Everyone come in, go to the back of the room, and find your name and number on the list.

Cover your number with your phone.

Next find the same number on your desk and have a seat.

Today we are going to discuss my syllabus, and what I expect in my class every day.

swhsbarnhart.weebly.com

**AP Statistics**
**Mrs. Barnhart**

Email: barnhartc@walton.k12.fl.us
School Phone: (850) 622 – 5020 ext. 4323

*Students and parents: Please sign that you have read and understand this information. Colored signature page attached.*

**Included in this packet:**

- Materials (things needed to succeed)
- Classroom Rules
- Classroom Procedures
- Grades
- Tutoring / Office Hours
- Course Overview
- Remind 101
- Approved Calculators for AP Exam
- School Calendar

**Things you must have to succeed:**

- 1 - 1 inch 3 ring binder
- 12 dividers
- Loose leaf notebook paper
- Plain copy paper
- ¼ inch grid graph paper
- 100 3x5 index cards
- Pencils (#2) and erasers
- Red and Blue Pens
- Graphing calculator (preferably a TI-84 Plus) and all cables
- Ruler
- Deck of Playing Cards

**Classroom rules**

1. Follow directions.
2. Be prepared for class every day.
3. Be respectful.
4. No food, drinks, cursing, putdowns, or grooming.
5. All other school and district policies and procedures.

**Classroom Procedures:**

Assignments will be given daily. All assignments will be graded for completeness by the teacher and checked for accuracy by the student. All work must be shown and **ALL** problems **MUST** be attempted in order to receive credit. All assignments must be kept in a notebook in chronological order. You will keep homework and Cornell Notes in your notebook.

Quizzes may be given on any day. They may or may not be announced. Expect a quiz on any day and they will not be pop quizzes.

There will be 1 test per chapter. It will be given upon completion of each chapter and announced at least two days prior to the date given. There will be one review day prior to the chapter test. **Students who are absent for test review must take a previously announced test on the assigned date. Students who are absent the day a previously announced test is given must make the test up the day they return to school. Plans must be made to take the test before or after school. You may not miss a second day of class in order to make up a previously missed test.**

Students who are absent are responsible for getting their makeup work and turning it in within one day after an absence. Any work turned in past this deadline will not receive credit. You must also turn in an excuse note to the office. (Please see the student handbook on page 14 for additional information.)

Project grades will be averaged as major test grades.

**Grades**

Grading Scale

- 90% - 100% A
- 80% - 89% B
- 70% - 79% C
- 60% - 69% D
- 59% and below F

Grade Calculation:

- Daily Assignments & Homework 10%
- Quizzes ~~40%~~ 20%
- Tests, Notebook & Projects ~~50%~~ 70%

**Grades may be accessed anytime on the parent portal. Please sign-up at the front office and receive your password.**

**Important Grade Notes**

- A comprehensive exam will be given at the end of each 9 weeks and will count as 20% of the quarter average.
- Star Testing will be given three times during the school year. A Diagnostic test, Pre, and Post-test will also be given.
- Your AP Exam will determine if you receive college credit for the class. You must score a 3, 4, or 5 to receive college credit at select schools.

**Tutoring / Office Hours**

For the first semester, I will be in my office for tutoring on Wednesdays from 2:35-3:00 (or later as needed). For the second semester, I will be available for tutoring Monday-Thursday from 2:35-3:00 (or later as needed). If students are not able to attend afternoon tutoring, I am also available during 4th period and before school by appointment only.

**Course Overview**

AP Statistics is a course that prepares you for the SAT, ACT, and college. This is considered to be a college level class, and all students will be held to college standards. We will be using **The Practice of Statistics 4th edition, Starnes, Yates, and Moore (authors), 2012.**

The following topics will be covered in AP Statistics:

- Chapter 1 – Exploring Data
- Chapter 2 – Modeling Distributions of Data
- Chapter 3 – Describing Relationships
- Chapter 4 – Designing Studies

Cumulative Practice Test

- Chapter 5 – Probability: What are the Chances?
- Chapter 6 – Random Variables
- Chapter 7 – Sampling Distributions

Cumulative Practice Test (Midterms)

- Chapter 8 – Estimating with Confidence
- Chapter 9 – Testing a Claim
- Chapter 10 – Comparing Two Populations or Groups

Cumulative Practice Test

- Chapter 11 – Inference for Distribution of Categorical Data
- Chapter 12 – More about Regression

Cumulative Practice Test

- Review for AP Exam

After the AP Exam, the students will complete a cumulative final project. Rubric, directions, and examples will be available during the 4th nine weeks.

## AP Statistics Exam 2018 – Thursday, May 17 (Afternoon)

| Topic | Exam Percentage |
|---|---|
| Exploring Data | 20%-30% |
| Sampling & Experimental Design | 10%-15% |
| Anticipating Patterns | 20%-30% |
| Statistical Inference | 30%-40% |

| Exam Format | | |
|---|---|---|
| **Questions** | **Percent of AP Grade** | **Time** |
| 40 Multiple Choice | 50% | 90 minutes<br>• 2.25 minutes/question |
| 6 Free-Response<br>• 5 Short Answer<br>• 1 Investigative Task | 50% | 90 minutes<br>• 13 minutes/question<br>• 25 minutes |

| Free Response Question Scoring | |
|---|---|
| 4 | Complete |
| 3 | Substantial |
| 2 | Developing |
| 1 | Minimal |
| 0 | |

| AP Exam Grades | |
|---|---|
| 5 | Extremely Well-Qualified |
| 4 | Well-Qualified |
| 3 | Qualified |
| 2 | Possibly Qualified |
| 1 | No Recommendation |

# Topic I – Exploring Data

Describing patterns and departures from patterns (20%-30%)
*Exploring analysis of data makes use of graphical and numerical techniques to study patterns and departures from patterns. Emphasis should be placed on interpreting information from graphical and numerical displays and summaries.*

A. Constructing and interpreting graphical displays of distributions of univariate data (dotplot, stemplot, histogram, cumulative frequency plot)
    1. Center and spread
    2. Clusters and gaps
    3. Outliers and other unusual features
    4. Shape

B. Summarizing distributions of univariate data
    1. Measuring center: median, mean
    2. Measuring spread: range, interquartile range, standard deviation
    3. Measuring position: quartiles, percentiles, standardized scores (z-scores)
    4. Using boxplots
    5. The effect of changing units on summary measures

C. Comparing distributions of univariate data (dotplots, back-to-back stemplots, parallel boxplots)
    1. Comparing center and spread: within group, between group variables
    2. Comparing clusters and gaps
    3. Comparing outliers and other unusual features
    4. Comparing shapes

D. Exploring bivariate data
    1. Analyzing patterns in scatterplots
    2. Correlation and linearity
    3. Least-squares regression line
    4. Residuals plots, outliers, and influential points
    5. Transformations to achieve linearity: logarithmic and power transformations

E. Exploring categorical data
    1. Frequency tables and bar charts
    2. Marginal and joint frequencies for two-way tables
    3. Conditional relative frequencies and association
    4. Comparing distributions using bar charts

# Topic II – Sampling and Experimentation

Planning and conducting a study (10%-15%)
*Data must be collected according to a well-developed plan if valid information on a conjecture is to be obtained. This includes clarifying the question and deciding upon a method of data collection and analysis.*

A. Overview of methods of data collection
    1. Census
    2. Sample survey
    3. Experiment
    4. Observational study

B. Planning and conducting surveys
    1. Characteristics of a well-designed and well-conducted survey
    2. Populations, samples, and random selection
    3. Sources of bias in sampling and surveys
    4. Sampling methods, including simple random sampling, stratified random sampling, and cluster sampling

C. Planning and conducting experiments
    1. Characteristics of a well-designed and well-conducted experiment
    2. Treatments, control groups, experimental units, random assignments, and replication
    3. Sources of bias and confounding, including placebo effect and blinding
    4. Randomized block design, including matched pairs design

D. Generalizability of results and types of conclusions that can be drawn from observational studies, experiments, and surveys

# Topic III – Anticipating Patterns

Exploring random phenomena using probability and simulation (20%-30%)
*Probability is the tool used for anticipating what the distribution of data should look like under a given model.*

A. Probability
   1. Interpreting probability, including long-run relative frequency interpretation
   2. "Law of Large Numbers" concept
   3. Addition rule, multiplication rule, conditional probability, and independence
   4. Discrete random variables and their probability distributions, including binomial and geometric
   5. Simulation of random behavior and probability distributions
   6. Mean (expected value) and standard deviation of a random variable and linear transformation of a random variable

B. Combining independent random variables
   1. Notion of independence versus dependence
   2. Mean and standard deviation for sums and differences of independent random variables

C. The normal distribution
   1. Properties of the normal distribution
   2. Using tables of the normal distribution
   3. The normal distribution as a model for measurements

D. Sampling distributions
   1. Sampling distribution of a sample proportion
   2. Sampling distribution of a sample mean
   3. Central Limit Theorem
   4. Sampling distribution of a difference between two independent sample proportions
   5. Sampling distribution of a difference between two independent sample means
   6. Simulation of sampling distributions
   7. t-distribution
   8. Chi-square distribution

# Topic IV – Statistical Inference

Estimating population parameters and testing hypotheses (30%-40%)
*Statistical inference guides the selection of appropriate models.*

A. Estimation (point estimators and confidence intervals)
   1. Estimating population parameters and margins of error
   2. Properties of point estimators, including unbiasedness and variability
   3. Logic of confidence intervals, meaning of confidence level and intervals, and properties of confidence intervals
   4. Large sample confidence interval for a proportion
   5. Large sample confidence interval for the difference between two proportions
   6. Confidence interval for a mean
   7. Confidence interval for the difference between two means (unpaired and paired)
   8. Confidence interval for the slope of a least-squares regression line

B. Tests of Significance
   1. Logic of significance testing, null and alternative hypotheses; p-values; one- and two-sided tests; concepts of Type I and Type II errors; concept of power
   2. Large sample test for a proportion
   3. Large sample test for a difference between two proportions
   4. Test for a mean
   5. Test for a difference between two means (unpaired and paired)
   6. Chi-square test for goodness of fit, homogeneity of proportions, and independence (one- and two-way tables)
   7. Test for the slope of a least-squares regression line

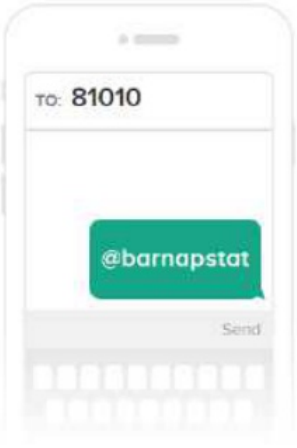
**Remind 101**

I highly recommend and encourage all students and parents to join my Remind 101. It is not required, but I do give extra credit each nine weeks for student and parent involvement. I use Remind 101 to send reminders for major assignments (not nightly homework). There is also a secure chat feature students can use to ask me questions about anything in class.

It is very easy to join Remind 101. (See instructions below)

All students and parents will use number **81080** as the **TO** number of a text message. Then type in their class code as the message. You can also download the Remind 101 App on your smart phone.

**4th Period AP Statistics – @barnapstat**



Next we are going to complete a 3-2-1 Card.

Tomorrow, you are going to take a pre-tests.

The test is an AP Practice Exam.  This test is used to show how much you learn and grow over this year.  You will take this test again at the end of the school year.

## 3-2-1 Card

On an index card you will write the following:

3 things you like
2 things you do not like
1 question you want to ask me

Please answer my question:

Have you taken Algebra 2 and what did you make?
Just write **yes** or **no** and your letter grade.

*Example*

Christin Barnhart

1. hot pink
2. math
3. color guard/ band

1. pickles
2. back talk

1. How can I help you be successful this year?

Yes and B

Now it's your turn! I will collect the cards as you go to your next period.

## 3-2-1 Card

On an index card you will write the following:

3 things you like
2 things you do not like
1 question you want to ask me

Pre-Test Tomorrow!

Please answer my question:

Have you taken Algebra 2 and what did you make?
Just write **yes** or **no** and your letter grade.