WAUCONDA SCHOOL DISTRICT 118
UNIT PLANNING ORGANIZER

Subject: AP Statistics

Chapter 2: Modeling Distributions of Data

Pacing: 9 days

STAGE 1 – DESIRED RESULTS

Essential Questions:

- **What are some characteristics of a normal distribution?**
- **What does the empirical rule tell you about data spread about the mean?**
- **Can you compare apples and oranges?**
- **What is a standard normal distribution?**
- **What is a standard z score?**
- **How do you convert any normal distribution to a standard normal distribution?**

Big Ideas:

- The Normal Distribution

CCSS (Priority Standards):

Appendix B (starts on p.41): http://media.collegeboard.com/digitalServices/pdf/research/RR2011-8.pdf

STAGE 2 – EVIDENCE

Concepts (What students need to know)	Performance Tasks (What students will be able to do)	21st Century Skills
• Section 2.1: Describing Location in a Distribution • Section 2.2: Density Curves and Normal Distributions	• Find and interpret the percentile of an individual value in a distribution of data. (2.1) • Estimate percentiles and individual values using a cumulative relative frequency graph. (2.1) • Find and interpret the standardized score (z-score) of an individual value in a distribution of data. (2.1) • Describe the effect of adding, subtracting, multiplying by, or dividing by a constant on the shape, center, and variability of a distribution of data. (2.1) • Use a density curve to model distributions of quantitative data. (2.2) • Identify the relative locations of the mean and median of a distribution from a density curve. (2.2) • Use the 68–95–99.7 rule to estimate (i) the proportion of values in a specified interval, or (ii) the value that corresponds to a given percentile in a Normal distribution. (2.2) • Find the proportion of values in a specified interval in a Normal distribution using Table A or technology. (2.2) • Find the value that corresponds to a given percentile in a Normal distribution using Table A or technology. (2.2) • Determine whether a distribution of data is approximately Normal from graphical and numerical evidence. (2.2)	

Common Formative/Summative Assessments:

➢ Quiz (2.1), Quiz (2.2), and Chapter 2 Test

Interim Assessments (Informal Progress Monitoring checks):

➢ Lesson 2.1 Classwork: “Where Do I Stand? (Part 2)” & Lesson 2.1 Check for Understanding (Day 1)

➢ Lesson 2.1 Classwork: “How Did I Do?” & Lesson 2.1 Check for Understanding (Day 2)

➢ Lesson 2.2 Classwork: “Exploring Density Curves” & Lesson 2.2 Check for Understanding (Day 1)

➢ Lesson 2.2 Classwork: “Will Marty Make it Back to the Future?” & Lesson 2.2 Check for Understanding (Day 2)

➢ Lesson 2.2 Classwork: “Do We Have Normal Test Scores?” & Lesson 2.2 Check for Understanding (Day 3)

Modified Common Assessments:

Modified Interim Assessments:

STAGE 3 – LEARNING PLAN
(INSTRUCTIONAL PLANNING)

Suggested Resources/Materials/Informational Texts

Suggested Research-based Effective Instructional Strategies

Identifying Similarities and Differences - The ability to break a concept into its similar and dissimilar characteristics allows students to understand (and often solve) complex problems by analyzing them in a more simple way. Teachers can either directly present similarities and differences, accompanied by deep discussion and inquiry, or simply ask students to identify similarities and differences on their own. While teacher-directed activities focus on identifying specific items, student-directed activities encourage variation and broaden understanding, research shows.

Summarizing and Note Taking - These skills promote greater comprehension by asking students to analyze a subject to expose what's essential and then put it in their own words. According to research, this requires substituting, deleting, and keeping some things and having an awareness of the basic structure of the information presented.

Cues, Questions, and Advance Organizers Cues - Questions, and advance organizers help students use what they already know about a topic to enhance further learning. Research shows that these tools should be highly analytical, should focus on what is important, and are most effective when presented before a learning experience

Cooperative Learning - Research shows that organizing students into cooperative groups yields a positive effect on overall learning. When applying cooperative learning strategies, keep groups small and don't overuse this strategy-be systematic and consistent in your approach.

Reinforcing Effort and Providing Recognition - Effort and recognition speak to the attitudes and beliefs of students, and teachers must show the connection between effort and achievement. Research shows that although not all students realize the importance of effort, they can learn to change their beliefs to emphasize effort.

Taken from: *Marzano's Nine Instructional Strategies for Effective Teaching and Learning*

Academic Vocabulary/ Word Wall	Enrichment/Extensions/ Modifications
Percentile	
Cumulative Relative Frequency Graph	
Standardized Score (Z-score)	
Density Curve	

Mean of a Density Curve	
Median of a Density Curve	
Normal Distribution	
Normal Curve	
The 68 - 95 - 99.7 Rule	
Standard Normal Distribution	
Normal Probability Plot	