WAUCONDA SCHOOL DISTRICT 118
UNIT PLANNING ORGANIZER

Subject: AP Statistics

Chapter 9: Testing Claims About Proportions

Pacing: 12 days

STAGE 1 – DESIRED RESULTS

Essential Questions:

- **How do we use sample data to compare proportions from two independent populations?**
- **How can statistical tests be constructed?**
- **Identify the conditions necessary to perform a confidence interval and hypothesis test for a population proportion.**
- **Discuss the ramifications of a Type I or Type II error.**

Big Ideas:

- Tests of significance

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 9.1: Significance Tests: The Basics • Section 9.2: Tests About Population Proportion • Section 9.3: Tests About a Difference in Proportions	• State appropriate hypotheses for a significance test about a population parameter. (9.1) • Interpret a P-value in context. (9.1) • Make an appropriate conclusion for a significance test. • State appropriate hypotheses for a significance test about a population parameter. (9.1) • Interpret a P-value in context. (9.1) • Make an appropriate conclusion for a significance test. (9.1) • State and check the Random, 10%, and Large Counts conditions for performing a significance test about a population proportion. (9.2) • Calculate the standardized test statistic and P-value for a test about a population proportion. (9.2) • Perform a significance test about a population proportion. (9.2) • State appropriate hypotheses for a significance test about a difference between two proportions. (9.2) • Determine whether the conditions are met for performing a test about a difference between two proportions. (9.2) • Calculate the standardized test statistic and P-value for a test about a difference between two proportions. (9.2) • Perform a significance test about a difference between two proportions. (9.2) • Interpret a Type I and a Type II error in context. Give a consequence of each error in a given setting. (9.3) • Interpret the power of a significance test and describe what factors affect the power of a test. (9.3)	

Common Formative/Summative Assessments:

- ➢ Quiz (9.1), Quiz (9.2), Quiz (9.3) and Chapter 9 Test

Interim Assessments (Informal Progress Monitoring checks):

- ➢ Lesson 9.1 Classwork: “Is Ms. Johnston a Good Free Throw Shooter?” & Lesson 9.1 Check for Understanding (Day 1)
- ➢ Lesson 9.1 Classwork: “Is This Gender Discrimination?” & Lesson 9.1 Check for Understanding (Day 2)
- ➢ Lesson 9.1 Classwork: “Should Rockford Switch to Bottled Water?” & Lesson 9.1 Check for Understanding (Day 3)
- ➢ Lesson 9.2 Classwork: “Are You Sure Ms. Johnston Isn’t a Good Free Throw Shooter?” & Lesson 9.2 Check for Understanding (Day 1)
- ➢ Lesson 9.2 Classwork: “Can You Taste the Rainbow?” & Lesson 9.2 Check for Understanding (Day 2)
- ➢ Lesson 9.2 Classwork: “Will Ms. Johnston Prove Herself?” & Lesson 9.2 Check for Understanding (Day 3)

- ➢ Lesson 9.3 Classwork: “Is Yawning Contagious?” & Lesson 9.3 Check for Understanding (Day 1)
- ➢ Lesson 9.3 Classwork: “Which Grade Is More Likely To Go To Prom? Part 2” & Lesson 9.3 Check for Understanding (Day 2)

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
Significance Test	
Null Hypothesis (H_o)	
Alternative Hypothesis (H_A)	
One Sided Alternative Hypothesis	

Two-sided Alternative Hypothesis	
P-Value	
Significance Level	
Type I Error	
Type II Error	
Standardized Test Statistic	
Power	