

## **Unit 5/6: Sampling Distributions and Inference for Categorical Data: Proportions**

### **Learning Targets and Success Criteria:**

- LT1: I can create a sampling distribution for means and proportions.  
SC: I can check the appropriate conditions.  
I can find the appropriate mean and st. deviation for the correct sampling distribution.
- LT2: I can calculate and interpret a confidence interval for 1 proportion.  
SC: I can use the correct formulas for estimate, critical value and margin of error.  
SC: I can solve for n given a certain MoE and Confidence Level
- LT3: I can perform a hypothesis test for 1 proportion.  
SC: I can write appropriate hypotheses.  
I can check appropriate conditions.  
I can create and appropriate model and calculate a p-value.  
I can write a conclusion based on my analyses.
- LT4: I can Identify Type I & Type II errors & Power  
SC: I can describe what a type I error is in context and the probability of this error ( $\alpha$ ).  
I can describe what a type II error is in context and the probability of this error ( $1-\alpha$ ).  
I can describe the Power of a test.  
I can interpret the p-value in context.
- LT5: I can calculate and interpret a confidence interval for the difference between 2 proportions.  
SC: I can use the correct formulas for estimate, critical value and margin of error.
- LT6: I can perform a hypothesis test for the difference in two proportions.  
SC: I can write appropriate hypotheses.  
I can check appropriate conditions.  
I can create and appropriate model and calculate a p-value.  
I can write a conclusion based on my analyses.

### **Day 1**

**Standard:** Sampling Distributions (7% - 12% of AP Exam) &  
Inference for Categorical Data: Proportions (12% - 15% of AP Exam)

### **Learning Target(s) & Success Criteria: #1 (see above)**

#### **Activator**

AP Exam MC Practice Question

#### **Direct Instruction, Guided Practice, Practice/Differentiation:**

Ch. 18 Notes (note taking guide)

#### **Summarizers:**

Selected Problems from Handout

**Homework:**

None

**Day 1b**

**Standard:** Sampling Distributions (7% - 12% of AP Exam) &  
Inference for Categorical Data: Proportions (12% - 15% of AP Exam)

**Learning Target(s) & Success Criteria:** #1 (see above)

**Activator**

AP Exam MC Practice Question

**Direct Instruction, Guided Practice, Practice/Differentiation:**

Finish Ch. 18 Notes (note taking guide)

**Summarizers:**

Selected Problems from Handout

**Homework:**

P. 432 #'s 5, 19, 47

**Day 2**

**Standard:** Sampling Distributions (7% - 12% of AP Exam) &  
Inference for Categorical Data: Proportions (12% - 15% of AP Exam)

**Learning Target(s) & Success Criteria:** #1 (see above)

**Activator**

AP Exam MC Practice Question

**Direct Instruction, Guided Practice, Practice/Differentiation:**

Ch. 18 WS Packet (WS1 - Guided, WS2 & 3 Independent)

**Summarizers:**

Selected Problems from Handout

**Homework:**

P. 432 #'s 2,6,8,16,30,34,48

**Day 3, 3b, 3c**

**Standard:** Sampling Distributions (7% - 12% of AP Exam) &  
Inference for Categorical Data: Proportions (12% - 15% of AP Exam)

**Learning Target(s) & Success Criteria: #1 & 2 (see above)**

**Activator**

AP Exam MC Practice Question

**Direct Instruction, Guided Practice, Practice/Differentiation:**

Ch. 19 Notes day 1 (Notetaking Guide)

Ch. 19 Notes day 2 (Notetaking Guide)

Ch. 19 Notes day 3 (Notetaking Guide) & WS Packet (Independent Practice)

**Summarizers:**

Selected Problems from Handout

**Homework:**

Finish WS Packet after 3rd Day.

**Day 3d**

**Standard:** Sampling Distributions (7% - 12% of AP Exam) &  
Inference for Categorical Data: Proportions (12% - 15% of AP Exam)

**Learning Target(s) & Success Criteria: #1 & 2 (see above)**

**Activator**

AP Exam MC Practice Question

**Direct Instruction, Guided Practice, Practice/Differentiation:**

Hershey Kisses Lab for Confidence Intervals

**Summarizers:**

Selected Problems from Handout

**Homework:**

None

**Day 4**

**Standard:** Sampling Distributions (7% - 12% of AP Exam) &  
Inference for Categorical Data: Proportions (12% - 15% of AP Exam)

**Learning Target(s) & Success Criteria: #1 & 2 & 3 (see above)**

**Activator**

AP Exam MC Practice Question

**Direct Instruction, Guided Practice, Practice/Differentiation:**

Ch. 20 Notes (notetaking guide)

**Summarizers:**

Selected Problems from Handout

**Homework:**

P. 478 #21

**Day 4b**

**Standard:** Sampling Distributions (7% - 12% of AP Exam) &  
Inference for Categorical Data: Proportions (12% - 15% of AP Exam)

**Learning Target(s) & Success Criteria: #1 & 2 & 3 (see above)**

**Activator**

AP Exam MC Practice Question

**Direct Instruction, Guided Practice, Practice/Differentiation:**

Water on Earth's Surface Task

**Summarizers:**

Selected Problems from Handout

**Homework:**

P. 478 #26

**Day 4c**

**Standard:** Sampling Distributions (7% - 12% of AP Exam) &  
Inference for Categorical Data: Proportions (12% - 15% of AP Exam)

**Learning Target(s) & Success Criteria: #1 & 2 & 3 (see above)**

**Activator**

Hopkins Forest 1-proportion z interval & test example

**Direct Instruction, Guided Practice, Practice/Differentiation:**

Ch. 20 1-Proportion-z-intervals and tests practice WS Packet

**Summarizers:**

Selected Problems from Handout

**Homework:**

Finish Packet

**Day 4d**

**Standard:** Sampling Distributions (7% - 12% of AP Exam) &  
Inference for Categorical Data: Proportions (12% - 15% of AP Exam)

**Learning Target(s) & Success Criteria: #1 & 2 & 3 (see above)**

**Activator**

Drug X & Y and Election 1-proportion z interval & test example

**Direct Instruction, Guided Practice, Practice/Differentiation:**

Ch. 19 & 20 (1-Proportion-z-intervals and tests) Quiz Review

**Summarizers:**

Selected Problems from Handout

**Homework:**

Finish Quiz Review & STUDY FOR QUIZ

**Day 4e**

**Standard:** Sampling Distributions (7% - 12% of AP Exam) &  
Inference for Categorical Data: Proportions (12% - 15% of AP Exam)

**Learning Target(s) & Success Criteria: #1 & 2 & 3 (see above)**

**Activator**

AP Exam MC Practice Question

**Direct Instruction, Guided Practice, Practice/Differentiation:**

Ch. 19 & 20 (1-Proportion-z-intervals and tests) Quiz

**Summarizers:**

Selected Problems from Handout

**Homework:**

None

**Day 5 & 5b**

**Standard:** Sampling Distributions (7% - 12% of AP Exam) &  
Inference for Categorical Data: Proportions (12% - 15% of AP Exam)

**Learning Target(s) & Success Criteria: #1 & 2 & 3 & 4 (see above)**

**Activator**

AP Exam MC Practice Question

**Direct Instruction, Guided Practice, Practice/Differentiation:**

Day 1 Ch. 21 Notes

Day 2 - finish notes

**Summarizers:**

Selected Problems from Handout

**Homework:**

P. 499 #'s 1-15 (after day 2)

**Day 6**

**Standard:** Sampling Distributions (7% - 12% of AP Exam) &  
Inference for Categorical Data: Proportions (12% - 15% of AP Exam)

**Learning Target(s) & Success Criteria: #1 & 2 & 3 & 4 (see above)**

**Activator**

AP Exam MC Practice Question

**Direct Instruction, Guided Practice, Practice/Differentiation:**

Ch. 21 Errors and P-values WS Packet (WS1 Guided & WS2 (turn in) & WS3 (HW))

**Summarizers:**

Selected Problems from Handout

**Homework:**

WS3

**Day 6b**

**Standard:** Sampling Distributions (7% - 12% of AP Exam) &  
Inference for Categorical Data: Proportions (12% - 15% of AP Exam)

**Learning Target(s) & Success Criteria: #1 & 2 & 3 & 4 (see above)**

**Activator**

AP Exam MC Practice Question

**Direct Instruction, Guided Practice, Practice/Differentiation:**

Review so far:

P. 434 #'s 22, 38 (Ch. 18 - Sampling Distributions)

P. 456 #'s 17, 18 (Ch. 19 - 1-prop-z-interval)

P. 477 #'s 15, 16 (Ch. 20 - 1-prop-z-test)

**Summarizers:**

Selected Problems from Handout

**Homework:**

Finish book work

**Day 7/7b**

**Standard:** Sampling Distributions (7% - 12% of AP Exam) &  
Inference for Categorical Data: Proportions (12% - 15% of AP Exam)

**Learning Target(s) & Success Criteria: #1 & 2 & 3 & 4 & 5 & 6 (see above)**

**Activator**

AP Exam MC Practice Question

**Direct Instruction, Guided Practice, Practice/Differentiation:**

Ch. 22 Notes

**Summarizers:**

Selected Problems from Handout

**Homework:**

P. 519 #25

**Day 8**

**Standard:** Sampling Distributions (7% - 12% of AP Exam) &  
Inference for Categorical Data: Proportions (12% - 15% of AP Exam)

**Learning Target(s) & Success Criteria: #1 & 2 & 3 & 4 & 5 & 6 (see above)**

**Activator**

AP Exam MC Practice Question

**Direct Instruction, Guided Practice, Practice/Differentiation:**

Ch. 22 WS Packet (2-propz-intervals & tests)

**Summarizers:**

Selected Problems from Handout

**Homework:**

Finish packet

**Day 8b**

**Standard:** Sampling Distributions (7% - 12% of AP Exam) &  
Inference for Categorical Data: Proportions (12% - 15% of AP Exam)

**Learning Target(s) & Success Criteria: #1 & 2 & 3 & 4 & 5 & 6 (see above)**

**Activator**

Twitter Politician Example

**Direct Instruction, Guided Practice, Practice/Differentiation:**

Ch.'s 21 & 22 Quiz Review (Errors--type I & type II and 2-prop-z-intervals & tests)

**Summarizers:**

Selected Problems from Handout

**Homework:**

Finish Quiz Review & STUDY FOR QUIZ

**Day 8c**

**Standard:** Sampling Distributions (7% - 12% of AP Exam) &  
Inference for Categorical Data: Proportions (12% - 15% of AP Exam)

**Learning Target(s) & Success Criteria: #1 & 2 & 3 & 4 & 5 & 6 (see above)**

**Activator**

AP Exam MC Practice Question

**Direct Instruction, Guided Practice, Practice/Differentiation:**

Ch.'s 21 & 22 Quiz (Errors--type I & type II and 2-prop-z-intervals & tests)

**Summarizers:**

Selected Problems from Handout

**Homework:**

START WORKING ON TEST REVIEWS



### **Day 9a, 9b, 9c**

**Standard:** Sampling Distributions (7% - 12% of AP Exam) &  
Inference for Categorical Data: Proportions (12% - 15% of AP Exam)

**Learning Target(s) & Success Criteria:** #1 & 2 & 3 & 4 & 5 & 6 (see above)

#### **Activator**

AP Exam MC Practice Question

#### **Direct Instruction, Guided Practice, Practice/Differentiation:**

Inference for Proportions Review Packet  
Unit 5/6 In Class Review  
AP STATISTICS Review for Unit 5/6 Exam  
Test Review 1  
Test Review 2  
Test Review 3  
Test Review 4

#### **Summarizers:**

Selected Problems from Handout

#### **Homework:**

STUDY FOR TEST

### **Day 10a/10b**

**Standard:** Sampling Distributions (7% - 12% of AP Exam) &  
Inference for Categorical Data: Proportions (12% - 15% of AP Exam)

**Learning Target(s) & Success Criteria:** #1 & 2 & 3 & 4 & 5 & 6 (see above)

#### **Activator**

AP Exam MC Practice Question

#### **Direct Instruction, Guided Practice, Practice/Differentiation:**

Unit 5/6 Test - Sampling Distributions & Inference for Categorical Data: Proportions

#### **Summarizers:**

Selected Problems from Handout

#### **Homework:**

None