

FRAPPYs

Utilizing **F**ree **R**esponse
AP Problems (**Y**ay!)
as Formative Assessments

Atlanta Area AP Statistics
Teachers Association

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LEARNING TARGETS

Session Goal:

Introduce the FRAPPY process as a
formative assessment tool to:

- ✓ Strengthen student understanding,
- ✓ Develop communication skills, and
- ✓ Provide AP Exam preparation.



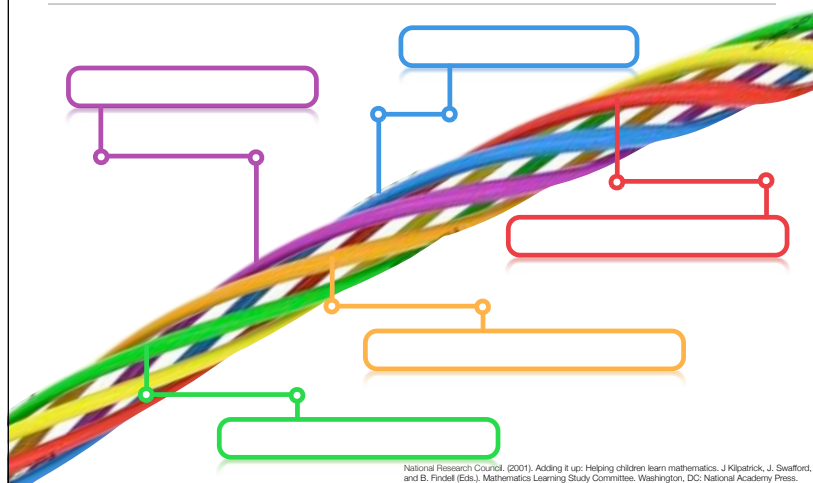
- ✓ I can describe a quality statistical response.
- ✓ I can utilize AP Free Response Problems as formative assessments to develop statistical understanding and effective communication skills.

Part 1:

- ✓ Statistical Thinking
- ✓ AP Free Response Questions
- ✓ Lessons Learned from the Reading



ATTRIBUTES OF STATISTICAL PROFICIENCY



REASONING AND SENSE MAKING

"Reasoning and Sense Making are the foundations for the processes of mathematics..."

...teachers must *judiciously select tasks* that require students to figure things out for themselves and ask *probing questions*."



REASONING AND SENSE MAKING

"Assessment that focuses primarily on students' abilities to...perform basic statistical computations will lead students to believe that reasoning and sense making are not important...**We must ask students to explain their thinking.**"

NCTM Focus in High School Mathematics: Reasoning and Sense Making

NCTM Focus in High School Mathematics: Reasoning and Sense Making

FREE RESPONSE QUESTIONS

"Statistics is a discipline in which clear and complete communication is an essential skill.

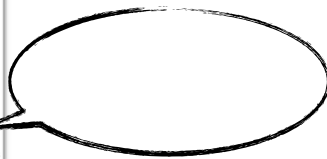
The free-response questions require students to use their analytical, organizational, and communication skills to formulate cogent answers."

Students must...

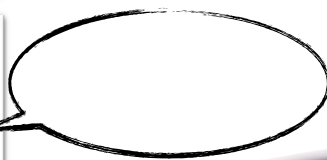


FREE RESPONSE QUESTIONS

Relate two or more different content areas...as they formulate a complete response or solution to a statistics problem.



Demonstrate their mastery of statistics in a format that permits them to determine how they will organize and present each response.



WHAT HAVE WE LEARNED AS READERS?



- ✓ AP FRQ's are **QUALITY** assessment items.
- ✓ **COLLABORATION** is critical for success.
- ✓ There are 4 things that will maximize a student's score on a Free Response Question.

- 1.
- 2.
- 3.
- 4.



Part 2:

- ✓What is Formative Assessment?
- ✓Strategies of Assessment for Learning
- ✓The Purpose of the FRAPPY



WHAT IS FORMATIVE ASSESSMENT?

How do we increase Conceptual Understanding and Communication Skills {ie. Statistical Proficiency}?

Formative Assessment

Formal and informal _____ teachers AND students use to gather evidence for the _____.



Stiggins, R., (2006) Classroom Assessment for Learning. Assessment Training Institute, Educational Testing Service, Portland, Oregon.

STRATEGIES OF ASSESSMENT FOR LEARNING

■ _____?

- Provide Clear, Understandable Learning Targets
- Use Examples and Models of Strong and Weak Work

■ _____?

- Offer Regular Descriptive Feedback
- Teach Students to Self Assess and Set Goals

■ _____?

- Teach Students Focused Revision
- Engage Students in Self-Reflection

Chappuis, J., (2009) Seven Strategies of Assessment for Learning. Assessment Training Institute, Educational Testing Service, Portland, Oregon.



...NOT ROCKET SCIENCE

To improve, students must:

- ✓ Know what good work looks like
- ✓ Compare their work to that standard
- ✓ Understand how to close gaps

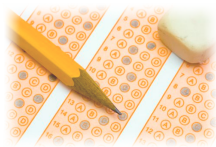


The POWER is in the _____,
_____ use of FRAPPYs
as _____!

Sadler, R. - Presented by Rick Stiggins
Assessment Training Institute

THE PURPOSE OF THE FRAPPY

- Important Note #1: We over-TEST our kids.



- Important Note #2: AP Statistics is NOT a test-preparation course.

The primary intent of the FRAPPY process is NOT to prepare for the AP exam or assign grades...

...its purpose is to help develop students' conceptual understanding and communication skills.

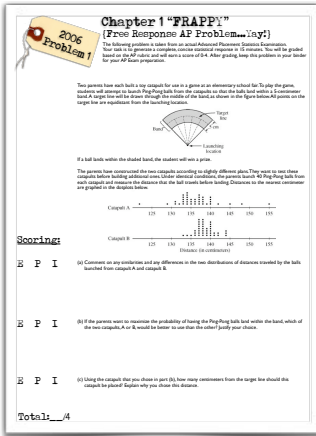
Part 3:

The FRAPPY Process

- ✓ Step 1
- ✓ Step 2
- ✓ Step 3
- ✓ Step 4
- ✓ When Should I FRAPPY?



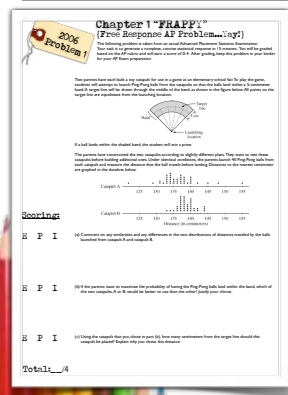
THE FRAPPY PROCESS



- The FRAPPY Process
 - “Free Response AP Problem, Yay!”
 - 1 Problem - 1 Class Period
 - ✓ Intent of Question
 - ✓ Sample Responses
 - ✓ Rubric Discussion
 - ✓ Score and Reflect

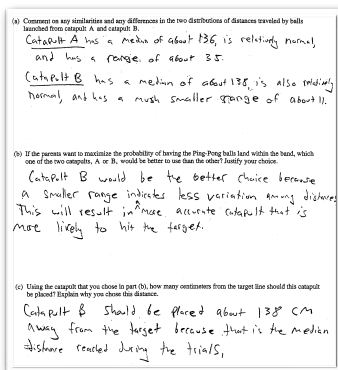
WHERE AM I GOING?

STEP 1



- _____ to work on Problem
- READ the ENTIRE problem.
- Determine “_____”
 - What are they looking for?
- Formulate Response
 - Proper application of concept(s)
 - Clear Communication
 - Context, Context, Context!

WHAT DOES GOOD LOOK LIKE? STEP 2



- _____ Intent of Question
- _____ sample student responses
 - Available at AP Central
 - NCTM Assessment Sampler
 - How would **YOU** score these?

- Determine what constitutes...
 -
 -
 -
 -



WHERE AM I NOW?

STEP 3



- _____ Rubric/Scoring Guideline
- _____ Intent of Question
- _____ “model solution” for each part
- _____ your papers with a partner
- Each part receives
- _____ 1-4 score using a holistic approach

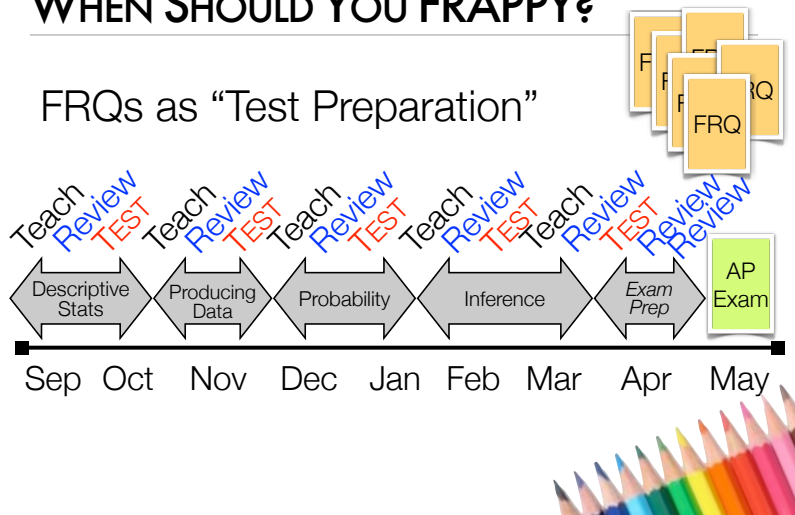
HOW CAN I CLOSE THE GAP?

STEP 4

- _____ is critical
- What made each part an **E**, **P**, or **I**?
- What could you have done differently to **increase** your score?
- How would you approach a similar problem in the future?
- **Note** key items on your FRAPPY.
- **File** for Review and Prep.

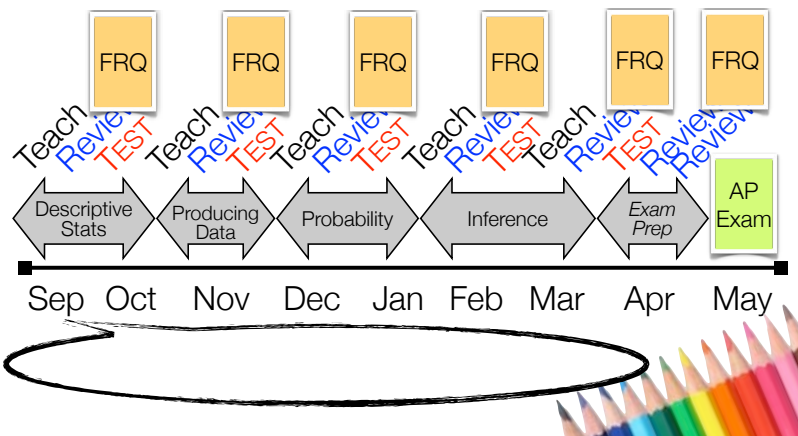
WHEN SHOULD YOU FRAPPY?

FRQs as “Test Preparation”



WHEN SHOULD YOU FRAPPY?

FRQs as *Formative Assessment*



Part 5:

Wrapping it up

- ✓Resources
- ✓Discussion

RESOURCES



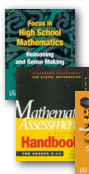
- Past Free Response Question and Student Samples
http://apcentral.collegeboard.com/apc/members/exam/exam_information/8357.html



- StatsMonkey Resource Clearinghouse, FRAPPYs
<http://web.mac.com/statsmonkey/>



- Pearson Assessment Training Institute
<http://www.assessmentinst.com/>



- NCTM Focus in High School Mathematics, Assessment Handbook
<http://www.nctm.org/>

CONCLUDING THOUGHTS

"Innovations that include strengthening the practice of formative assessment produce significant and often substantial learning gains."

Black & William, "Inside the Black Box: Raising Standards Through Classroom Assessment."



QUESTIONS - DISCUSSION



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