



**Publisher Response | Bedford, Freeman, & Worth Publishing Group LLC**

As the top provider of High School Statistics textbook programs, BFW Publishers is honored to announce that the fourth edition of our High School Statistics program, ***Statistics and Probability with Applications (SPA 4e)***, has been reviewed by the esteemed Texas Resources Review Committee and has received outstanding ratings.

The widely used **SPA** program (and its authors) have long been pioneers in statistics education - and was the first high school statistics program written for high school teachers and students by high school teachers. We welcome you to watch [The Story of SPA](#) by co-author Josh Tabor.

The fourth edition has been meticulously updated with unique features that enhance students' grasp of statistical concepts in contemporary applications. This dynamic program now introduces normal distributions in Chapter 2, including enriched (and abundant) video support, detailed lecture slides, fresh examples and exercises, and engaging real-world data.

Like all BFW programs, this edition is accompanied by an unmatched robust set of Teacher and Student resources - including an annotated teacher's edition and test bank. Our digital platform, [Achieve](#), provides easy point-of-use access to the resources, course management features, and thousands of online homework problems with detailed guided feedback.

Explore more at [bfwpub.com/SPA4e](http://bfwpub.com/SPA4e).

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We are delighted by our outstanding ratings in the review, including the exceptional score of 100% ELPS. Unfortunately, we fell short on one citation: **6.B.iii**, the sole unmet criterion. Below is the complete citation:

*(B) explain how changes in the sample size, confidence level, and standard deviation affect the margin of error of a confidence interval*

*(i) explain how changes in the sample size affect the margin of error of a confidence interval*

*(ii) explain how changes in the confidence level affect the margin of error of a confidence interval*

***(iii) explain how changes in the standard deviation affect the margin of error of a confidence interval***

We are committed to wholeheartedly backing this indicator and offering additional context beyond our initial submission. We have asked our author team for a thorough examination of this citation, and we believe that although we fell short of meeting 6.B.iii in our review, **SPA 4e** would support its application practice. Please find below our author's elucidation:



The issue raised in 6.B.iii says "explain how changes in the standard deviation affect the margin of error of a confidence interval". Taken literally, this standard would only apply to a confidence interval for a population MEAN. Why? Because the formula for calculating a confidence interval for a population PROPORTION,  $\hat{p} \pm z^*(\sqrt{\hat{p}(1-\hat{p})}/n)$  only includes the sample proportion  $\hat{p}$ , the critical value  $z^*$  (which is determined by the confidence level), and the sample size  $n$ . In contrast, the formula for calculating a confidence interval for a population MEAN is  $\bar{x} \pm t^*(s/\sqrt{n})$  includes the sample mean  $\bar{x}$ , the critical value  $t^*$  (which is determined by the confidence level and sample size), the **sample standard deviation  $s$** , and the sample size  $n$ .

The confidence interval Bingo activity Method 2 and Method 3 on pg 507 visually illustrates how a larger sample standard deviation leads to a wider interval (larger margin of error) in a confidence interval for a population mean.

The formula for calculating a confidence interval for a population mean on pg 510 and the subsequent example on that page illustrate the relationship between the standard deviation of the sample and the margin of error. So does the Lesson App 8.5 on page 511. And Exercises 15-20 on pg 513.

Exercise 24 on page 513 gets at the connection between sample standard deviation and margin of error.

Pages 516-519 in Lesson 8.6 reinforce the connection between sample SD and margin of error when calculating a confidence interval for a population mean.

The Think About It on Page 517 discusses the relationship between sample size and margin of error in a confidence interval for a population mean.

The Stats applied resolved! on page 521 specifically discusses margin of error in a confidence interval for a population mean, and what researchers can do to try and reduce the margin of error (questions 2 and 3).

We are confident that **Statistics and Probability with Applications (4E)** (and any future editions) will provide you and your students with the most fulfilling, engaging, and proper High School statistics classroom experience while fully supporting the State of Texas' standards and curriculum. Join the BFW community today and discover the power of **SPA**.

Explore the following links and videos for additional information.

[Teacher's Edition Sample Chapter](#)

[Video: How to Plan with SPA 4e PD Training with Doug Tyson.](#)

[Video: Stats/Math Medic Resources for SPA 4e](#)

[Stats/Math Medic Lesson Plan \(aligned with SPA\)](#)