

Section 2 Response from Publisher

Publisher: Pearson

Title of Textbook(s): AP Calculus, Briggs/Cochran © 2014

Grade Levels: 11-12

Focus Metric 6b—Materials include teacher-directed materials that explain the role of the practice standards in the classroom and in students' mathematical development. Problems and activities present opportunities for students to make use of and exhibit the practices as they work on content.

Comments: No teacher directed materials that explain the role of the practice standards.

Number Rating: 0

Pearson Response: The Annotated Teacher's Edition contains numerous **Teacher Notes** that provide guidance to teachers. Though the practice standards are not explicitly mentioned, they are employed throughout the text and supplements. Representative examples for each of the Standards for Mathematical Practice are listed below.

Make sense of problems and persevere in solving them.

The **Teacher Resource Guide** that accompanies the text contains 59 guided projects that address many of the ideas mentioned in the practice standards. For example, the first guided project discusses problem-solving strategies that help students make sense of mathematical problems encountered in calculus. The very nature of each Guided Project—most involve sequential and substantial calculations leading to the desired result—invites students to explore complicated problems and persevere in solving them.

Reason abstractly and quantitatively.

Each section contains two blocks of exercises labeled **Further Explorations** and **Applications**. These exercises demand that students expand upon the basic skills learned in class and learned while completing the second block of exercises (**Basic Skills**).

Construct viable arguments and critique the reasoning of others.

Throughout the text, there are **Explain why or why not** exercises that challenge students to form viable mathematical arguments.

Model with mathematics.

Modeling is addressed throughout the text starting in the first chapter, in both the narrative and the exercise sets. Each section contains a block of **Applications** exercises, most of which involve mathematical models.

Use appropriate tools strategically.

Appropriate use of graphing calculators is discussed in the Annotated Teacher's Edition. For example, the teacher note on page 18 addresses the issue of appropriate use of technology in the classroom. Exercises, where use of a graphing calculator is appropriate, are marked with a technology icon throughout the text. Additionally, many sections include a final block of exercises (**Technology Exercises**) designed to aid students in their exploration of calculus while using technology.

Attend to precision.

Readers of the text are immersed in the clear and precise manner in which mathematics must be communicated. They are encouraged to communicate these ideas in their own voice when attempting the **Review Questions**.

Look for and make use of structure.

The structure of the narrative provides ample opportunity for students to discover and make use of patterns in mathematics. There are many exercises that further this goal (e.g. Exercise 62 on p. 145).

Look for and express regularity in repeated reasoning.

As above, the structure of the narrative illustrates repeated reasoning in every chapter. For example, in Chapter 3, the limit definition of the derivative is used again and again to develop a body of derivative formulas for the functions commonly encountered in calculus. Students duplicate this effort when they complete the exercise sets that are closely tied to the narrative.

Focus Metric 8c. Materials include supports for all learners, e.g. EL, students who are below grade level, advanced students.

Comments: No EL material or material for below grade level. Further exploration could provide some above grade level material.

Number Rating: 0

Pearson Response: Briggs Calculus contains support for learners who are performing below grade level and who are lacking in prerequisite skills necessary for studying Calculus. Appendix A contains a review of algebra, real numbers, inequalities, absolute values, the Cartesian coordinate system, and linear equations. Chapter 1 contains a review of the main ideas from precalculus to bring students up to speed before they embark on a study of calculus.

The online MyMathLab materials associated with the text also contains **Getting Ready for Calculus** practice tests that allow students to test their knowledge of prerequisite material from high school geometry and algebra.

Each section contains a block of **Additional Exercises** that are generally the most difficult exercises in the section. Some ask for proofs of results stated in the narrative, and many are well suited to advanced students. The **Guided Projects** also provide ample material for independent study for advanced students.

In addition, the online MyMathLab / MathXL for School technology resources associated with the text contain ample ways for students to practice their individual skill weaknesses. Using MathXL for School or MyMathLab for School, teachers can provide intervention to students who lack prerequisite skills while allowing students who have mastered the material to advance. MathXL for School meets the diverse needs of struggling students. Through the comprehensive suite of learning aids, students receive immediate feedback and on-demand tools that provide multiple representations of the content for each student, for each problem. Multiple representations include: animations, videos, written examples, and step-by-step break down of problems. Furthermore, MathXL for School delivers personalized study plans that enable them to receive personalized instruction and achieve mastery.