

Better AP Resources ... Better AP Results

Increasing participation and success in AP courses has become a popular state strategy for increasing the number of students who are ready for college or the workforce. In fact, 13 states plus the District of Columbia now supplement federal aid to cover the cost of the AP exam for economically disadvantaged students.

The College Board is also engaged in several related initiatives to help teachers prepare a broader, more diverse group of students succeed in AP courses. First, as explained in greater depth below, AP courses in several disciplines are being redesigned and new courses are being introduced to create AP courses that strike a balance between depth of understanding and breadth of content coverage.

A critical next step in supporting AP teachers is ensuring that the instructional materials for AP courses address the knowledge and skills articulated in the new course frameworks. To that end, the College Board partnered with [Learning List™](#) to provide educators with independent, professional reviews of AP materials¹. To ensure that the reviews were of the highest quality, the College Board participated in designing the alignment templates and the review methodology for AP materials. Each review incorporates feedback from multiple AP educators, many of whom were involved in the redesign of the AP course frameworks.

The development of new AP course frameworks was informed by:

- An analysis of the academic material students should know and the skills they should be able to do in order to attain success in college.
- Recommendations of national professional disciplinary organizations
- Value rubrics developed for the Association of American Colleges & Universities.
- Leading pedagogical and measurement practices.

As part of the review process, Learning List verifies each material's alignment to each of the Learning Objectives (LO), Essential Knowledge statements (EKs), and Skills/Practices in the relevant course framework. The reviews identify which of the citations (e.g., pages, lessons, videos) listed in the publisher's correlation *are aligned* and which are *not aligned* to each LO, EK, and Skill/Practice for the course. The College Board used these reviews to decide which materials to include on the 2017 Example Textbook List for each of these courses.

Biology	Computer Science Principles	US History
Chemistry	Calculus AB	World History
Physics I	Calculus BC	Seminar
Physics II	European History	Research

As explained below in the "Observations" section of this article, inclusion on an Example Textbook List *does not* indicate that the material is aligned to 100% of the standards in the course framework.

The College Board's redesigned course frameworks and Learning List's in-depth reviews of AP materials will work in concert to drive meaningful change, create better instructional resources and provide teachers with the instructional support they need to fuel students' success in AP courses and on AP exams. This paper explains significant changes in the new course frameworks and insights gleaned from the reviews of almost 100 AP instructional materials.

Changes to the AP Course Frameworks

The College Board has revised the frameworks for several of Advanced Placement (AP) courses. The new AP course frameworks define what students “should know and be able to do” after completing a particular AP course. The changes reflect the College Board’s ongoing efforts to ensure that AP instruction in high school continues to challenge students with college-level academic material and also allow them the time to engage deeply with the subject matter.

The College Board worked with college faculty, AP teachers, and assessment experts to create new frameworks for AP courses in the sciences, histories, and world languages, as well as for AP Calculus, AP Computer Science Principles, AP Seminar, and AP Research courses. The new frameworks were created using the Understanding by Design® model by Wiggins and McTighe. This model emphasizes teaching toward a deeper understanding and application of concepts and skills. The process begins by asking two questions about learning outcomes: (1) What do students need to know and be able to do at the end of the course? and (2) What evidence is needed to show that students have developed the knowledge and skills?

The new frameworks focus on building discipline-specific skills, such as

- “Thinking Skills” for social studies courses (e.g., AP U.S. History); and
- “Practices” for AP Calculus, AP Computer Science Principles, and AP science courses (e.g., AP Biology).

Hallmarks of the redesigned AP courses and exams

- Detailed course frameworks that define what students know and should be able to do.
- Research-based course frameworks that strike a balance between depth of understanding and breadth of content coverage.
- Greater emphasis on discipline-specific inquiry, reasoning, and communication skills.
- Assessments designed to elicit evidence of student achievement for each learning objective and aligned to core skills.

Students are expected to apply the skills/practices to core concepts

throughout each course and on each exam question. For example, the new AP Biology framework requires students to “perform data analysis and evaluation of evidence” and students in the AP Seminar course must “establish an argument,” “understand and analyze context,” and “engage an audience.” In Calculus, students must be able to “attend to precision graphically, numerically, analytically and verbally,” and “connect concepts to their visual representations with and without technology”. A Learning List reviewer commented on AP Calculus’ new emphasis on skills:

The Mathematical Practices for AP Calculus (MPACs) ... are new. They are things that students should be able to do across the entire course. In fact with a slight change to the calculus specific items, they should be done in every math course. ... They [students] are supposed to do them throughout the course with all the topics, and not just one section at a time.

Observations About AP Materials

Learning List has reviewed almost 100 AP instructional materials, including publisher-produced and free Open Educational Resources. The following observations gleaned from those reviews are offered to help inform educators’ selection and use of AP materials.

Alignment % of Materials on AP Example Textbook Lists				
Course	Range of Alignment Percentages			
	Learning Objectives	Practices or Skills	Learning Objectives	Practices or Skills
Biology, Chemistry, Physics I and II	77	92	100	100
Calculus AB/BC	65	53	100	100
U.S., European, and World History	61	70	100	100
AP Computer Science Principles	56	43	97	100

Alignment of AP Materials:

AP materials vary significantly in their alignment to the AP course frameworks. As this table shows, there is even a wide range in the alignment percentages among materials on the AP Example Textbook Lists.

Alignment of the AP Skills/Practices:

- While many AP materials allow students to practice the requisite skills, few actually *teach* students how to develop the skills.
- Many products still **have a lot of progress to make in terms of historical thinking skills**, particularly in terms of integrating the skills of **historical argumentation** (analyzing diverse interpretations) and **chronological reasoning** (especially periodization).

Study Guides/Assessment Questions:

- Most of the study guides provided by the publishers have simple, short questions that really do not help students prepare for the new style of test questions. Additionally, students need to know *why* the answers are correct, not just what the correct answer is. Multiple choice questions need detailed answer explanations.
- Assessment questions provided by publishers seem more specific than AP released questions and test *knowledge* more than historical *skills* using the prompt; materials need to test more of the skills than the knowledge.

Instructional Supports: Across subjects and publishers, AP instructional materials differ in the number and type of instructional supports provided for students and teachers. Because many AP materials are true college texts, they do not include the instructional help that some high school students may need. For example, many college texts do not include glossaries, study guides, and AP-formatted example questions and practice tests to help students prepare for exams. Some college texts also do not provide instructional resources for teachers. The lack of teacher resources combined with the new focus on skills in the AP Frameworks raised concerns among some Learning List reviewers. Noting the absence of support for the MPACs in AP Calculus resources, one reviewer cautioned, “Teachers using any of the standard textbooks [...] will need to be quite familiar with the MPACs and be sure their students are doing them across all the topics in the Framework.” Furthermore, some college resources contain learning tools that may not be appropriate for high school students, such as an app that when activated by teachers allows students to share, and even sell, their course notes.

Conclusion

The College Board-Learning List partnership provides the opportunity for teachers to make better informed, evidence-based choices when selecting and then *using* AP instructional resources. Ultimately, this partnership strives to encourage the development of instructional resources that are aligned to AP

standards and empower teachers with information to help them use AP materials most effectively to prepare a diverse population of AP students for success in AP courses.