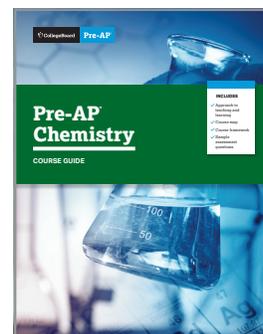




Pre-AP Chemistry and Pennsylvania Academic Standards for Science and Technology and Engineering Education: Alignment Summary

Pre-AP courses focus deeply on a limited number of concepts and skills with the broadest relevance for high school coursework and college and career success. The course framework serves as the foundation of the course and defines these prioritized concepts and skills.

When teaching a Pre-AP course, teachers have purposeful time and space to bring their own voice and lessons into each unit to best meet the needs of their students and address the full range of state standards. This alignment summary demonstrates the deep connections between the Pre-AP Chemistry Course Framework and the Pennsylvania Academic Standards for Science and Technology and Engineering Education (Chemistry) to support teachers and schools in their planning. Along with the corresponding standards crosswalk, teachers and schools can use this alignment summary when planning and preparing to implement Pre-AP Chemistry.



Alignment at a Glance: Very Strong

Pennsylvania Academic Standards for Chemistry:



- Properties of Matter
- Reactions

Discipline Highlights

- ✓ Overall, the alignment between the Pre-AP Chemistry Course Framework and the Pennsylvania Academic Standards for Chemistry is very strong.
- ✓ The majority of the Pennsylvania Academic Standards for Chemistry are covered in full or in part by the Pre-AP framework.
- ✓ The Pennsylvania Academic Standards for Chemistry and the Pre-AP course framework share the strongest alignment with the Properties of Matter and Reactions strands.
- ✓ The Pre-AP course framework introduces additional topics beyond the requirements of the Pennsylvania Academic Standards for Chemistry. These topics include molecular geometry, gas laws, and acids and bases.



= **Very strong alignment**



= **Partial alignment**

Alignment between the Pre-AP Chemistry Course Framework and the Pennsylvania Academic Standards for Chemistry is described as *very strong* or *partial*. A *very strong* alignment is one in which the majority of standards are fully addressed by the mapped Pre-AP Learning Objectives (LOs). A *partial* alignment is one in which the standards are partially addressed by the corresponding Pre-AP Learning Objectives. Partial alignment can occur when one framework includes greater specificity or extends beyond the scope of the other framework. Given the focused nature of the Pre-AP course framework, some partial alignments are to be expected.

Alignment at a Glance: Partial

Pennsylvania Academic Standards for Chemistry:



- Structure of Matter
- Unifying Themes
- Matter and Energy

Discipline Highlights



While the overall alignment between the Pennsylvania Academic Standards for Chemistry and the Pre-AP Chemistry Course Framework is very strong, there are a few areas of partial alignment due to the more granular nature of some of the Pennsylvania Academic Standards. For example, the Pre-AP framework includes many concepts in the topic of atomic structure but does not include electron configuration. For this reason, the standard was given a partial rating. However, there are ample opportunities for teachers to incorporate electron configuration into the atomic structure section of the Pre-AP course.



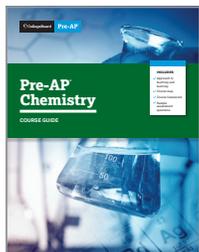
The Pre-AP framework has a more intentionally narrow focus on a prioritized set of concepts, so certain topics are considered outside the scope of the Pre-AP course. For example, the topic of nuclear chemistry, covered in standard 3.2.C.A3., is considered outside the purview of the Pre-AP course and is not explicitly covered by the Pre-AP learning objectives.



Science and engineering practices are integrated in the Pre-AP learning objectives. The course framework provides frequent opportunities to address and develop the skills presented in Science as Inquiry.

Summary

Beyond alignments to the course framework, it is also important for educators to turn to the Pre-AP Shared Principles and Pre-AP Science Areas of Focus to understand the full picture of alignment between Pre-AP Chemistry and the Pennsylvania Academic Standards for Chemistry. The shared principles and areas of focus represent the Pre-AP approach to teaching and learning, and these principles deeply address skill development and disciplinary practices that cannot be easily captured within a standards crosswalk. **In summary, there are ample opportunities for teachers to address the Pennsylvania Academic Standards for Chemistry with confidence throughout this course.**



Learn more about Pre-AP Chemistry at preap.org