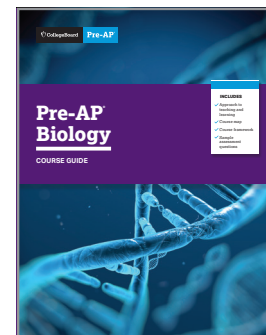




# Pre-AP Biology and Minnesota Academic Standards in Science: Alignment Summary

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 Biology Course Framework and the Minnesota Academic Standards in Science 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 Biology.



## Alignment at a Glance: Very Strong

### Minnesota Academic Standards in Science:



- **Strand 4: Life Science**

Structure and Function in Living Systems  
Interdependence Among Living Systems  
Evolution in Living Systems

### Discipline Highlights

- ✓ Overall, the alignment between the Pre-AP Biology Course Framework and the Minnesota Academic Standards in Science is very strong.
- ✓ All four of Minnesota's Life Science Substrands and Physical Science Substrand 4 are covered in full or in part by the Pre-AP Biology Course Framework.
- ✓ All standards in Life Science Substrand 1, Structure and Function in Living Systems and Life Science Substrand 2, Interdependence Among Living Systems, are covered in full by the Pre-AP Biology Course Framework.
- ✓ The majority of standards in Life Science Substrand 3, Evolution in Living Systems, are deeply aligned to the Pre-AP Biology Course Framework.



= **Very strong alignment**



= **Partial alignment**

Alignment between the Pre-AP Biology Course Framework and the Minnesota Academic Standards in Science 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

## Minnesota Academic Standards in Science:



- **Strand 3: Earth and Space Science**  
Human Interactions with the Earth Systems

- **Strand 4: Life Science**  
Human Interactions with Living Systems

## Discipline Highlights



While the overall alignment between the Minnesota Academic Standards in Science and the Pre-AP Biology Course Framework is very strong, there are some expected gaps in alignment given the intentional focus and approach of the Pre-AP framework.



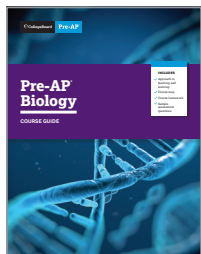
The Minnesota Academic Standards in Science at times include greater specificity than the Pre-AP Learning Objectives for some topics. For example, Minnesota standard 9.4.3.1.1 asks students to “explain the relationships among DNA, genes, and chromosomes.” While the Pre-AP Biology Course Framework does not explicitly ask students to explain the relationships among DNA, genes, and chromosomes, it does require students to describe certain features of DNA, genes, and chromosomes and how they relate (e.g., how DNA is organized differently in prokaryotes and eukaryotes, the role of mRNA and amino acids in protein synthesis, and how genetic information is expressed as proteins).



Although there are gaps in the alignment with some Minnesota science standards, it is valuable to see where the Pre-AP Biology Course Framework extends beyond what is listed in the Minnesota Academic Standards in Science.

## 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 Biology and the Minnesota Academic Standards in Science. 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 Minnesota Academic Standards in Science with confidence throughout this course.**



Learn more about Pre-AP Biology at [preap.org](https://preap.org)