



Grade Band Progressions

By: State Science Education Coordinating Committee | Feb 2024

BACKGROUND

What are the Grade Band Progressions?

A Framework for K-12 Science Education outlines learning expectations for grade bands that guide science teaching and learning. These grade bands are Grades K-2, 3-5, 6-8, and 9-12. In each grade band, the Science and Engineering Practices (SEPs), Crosscutting Concepts (CCCs), and Disciplinary Core Ideas (DCIs) are outlined in a way that allows for learning to increase in complexity as students progress through their K-12 science education. This increase in complexity across grade bands is called a progression.

Within each grade band, the framework provides progressions that outline the specific science concepts, practices, and crosscutting concepts that students should develop at each grade level. These progressions serve as a guide for educators to design curriculum and instruction that aligns with the framework.

- K-2: This grade band focuses on building foundational knowledge and skills in science. Students develop an understanding of basic scientific concepts and engage in hands-on investigations.
- 3-5: In this grade band, students deepen their understanding of core scientific ideas and begin to make connections between different concepts. They engage in more complex investigations and develop their scientific reasoning skills.
- 6-8: The middle school grade band focuses on reinforcing and expanding students' understanding of key science concepts. They explore disciplinary core ideas across different science disciplines and develop more sophisticated scientific practices.
- 9-12: The high school grade band aims to prepare students for college and career readiness in science. They delve into more specialized and advanced science topics, engage in scientific inquiry and engineering practices, and develop a deeper understanding of the connections between different scientific disciplines.

Why are these progressions important to three-dimensional science instruction?

These K-12 progressions clarify appropriate learning expectations for students using each of the three dimensions of science. Teachers should be aware of the progressions and expectations of the SEEd Standards for their grade band. Additionally, they should be aware of the grade band expectations above and below their own, where available. These expectations ensure coherent and scaffolded learning experiences, allowing students to build upon their prior knowledge and develop a strong foundation in science throughout their K-12 educational journey. If teachers focus science instruction below grade level or skip standards entirely, students may develop gaps in their understanding. Conversely, if teachers focus science instruction above grade level it is likely that, without a solid foundational understanding, students may develop misconceptions.

CLASSROOM APPLICATION

When observing a classroom in which the instruction is utilizing appropriate learning progressions, the following **student actions** should be visible:

- Engaging in concepts, skills, and tasks that are developmentally appropriate.
- Using key tools and concepts of the grade band to investigate and solve problems.
- Gaining independence in grade band concepts, practices, and thinking through release of effective supports over time.

To support instruction that is aligned with the progression bands, **teachers plan** by:

- Looking at the progressions found in the [Utah SEEd Core Guides](#).
- Creating and implementing instruction where students develop the knowledge, skills, and ways of thinking delineated for their grade band.

IMPLEMENTATION RUBRIC

Basic	Emerging	Effective	Exceptional
Science concepts, practices, and ways of thinking in instruction are not aligned to the SEEd Standards.	Science concepts, practices, and ways of thinking in instruction are aligned to SEEd standards. However, they are taught at a level above or below the grade band progression.	Science concepts, practices, and ways of thinking in instruction are aligned to both the SEEd standards and the grade band progression defined in Utah SEEd Core Guides.	Science concepts, practices, and ways of thinking in instruction are aligned to both the SEEd standards and the grade band progression. Additionally, scaffolds are built into instruction to support students in becoming independent at the grade band progression.

RESOURCES

[A Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas](#)

[Utah SEEd Core Guides](#): Grade band progressions are found within the core guides for each standard.

[Utah SEEd Standards: Appendix](#)



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