AVID STEM connections™

Ready Lesson Plans for STEM

Fun and engaging activities for K–8 | A multidisciplinary approach to STEM

Easy to integrate into your daily curriculum: Differentiated for grades K–2, 3–5, and 6–8

Designed for busy teachers

Teaching Problem Solving for Real Life

The students in our K–8 classrooms today will have career opportunities that we cannot even imagine! While we may not exactly know what those jobs will be, there is a strong possibility they will be related to the STEM field. All students need to be introduced to STEM experiences at an early age to build the foundation they will need for future careers. Most careers will require people to think critically and creatively, to collaborate with others, and to solve real-world problems.

How can we prepare students to be thoughtful and skilled problem solvers ready for careers of the future?

AVID STEM Connections draws upon multiple processes to develop students' problem-solving skills.

Design thinking serves as the foundation of AVID STEM Connections. As teachers guide their students through the design thinking process, they will utilize components of the engineering design process, computational thinking, and research and analysis skills across standards of content areas.

AVID STEM Connections intentionally and thoughtfully weaves relational capacity and the concepts of equity for all students throughout the lessons.

Social and emotional learning, growth mindset, perseverance, and future-ready skills are incorporated throughout the year in the K–2, 3–5, and 6–8 grade bands.

What Makes AVID STEM Connections Special?

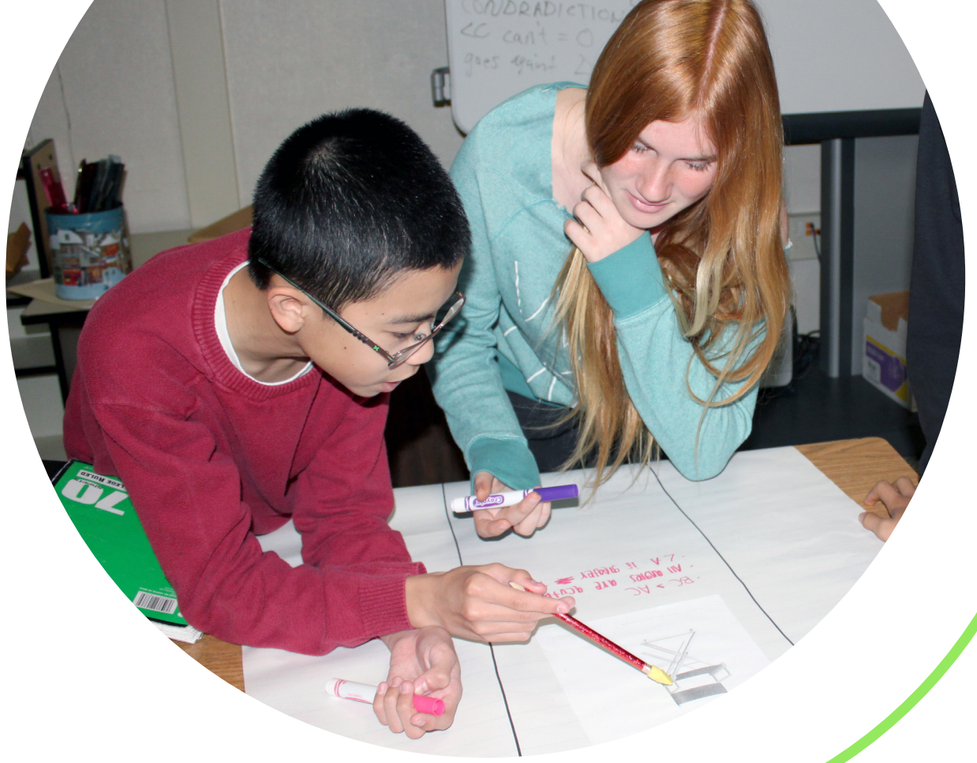
- Design thinking as a cross-disciplinary instructional approach to problem solving
- Integration of AVID's foundational writing, inquiry, collaboration, organization, and reading (WICOR®) strategies
- Scaffolded lessons for teachers new to STEM, and for those who want to improve their STEM instruction
- Inclusion of social and emotional learning (SEL) and future-ready skills
- Learning experiences integrating STEM disciplines and other content areas
- Participation in the AVID STEM Connections professional learning network (PLN)

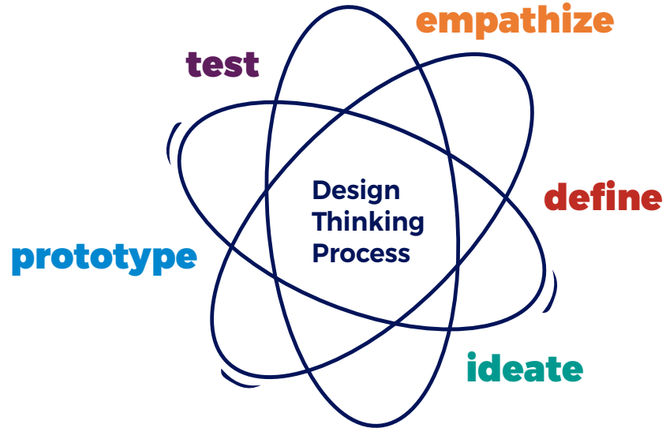
AVID STEM Connections Outcomes

- Develop problem-solving skills
- Introduce STEM-career awareness to elementary and middle school students
- Build STEM literacy through:
  - Multidisciplinary activities
  - Multimodal instruction
  - Standards-based connections
- Foster discovery, exploration, and curiosity

Designed in accordance with national standards:
Next Generation Science Standards (NGSS), Common Core State Standards (CCSS), International Society for Technology in Education (ISTE)

Learn more at avid.org/stemconnections



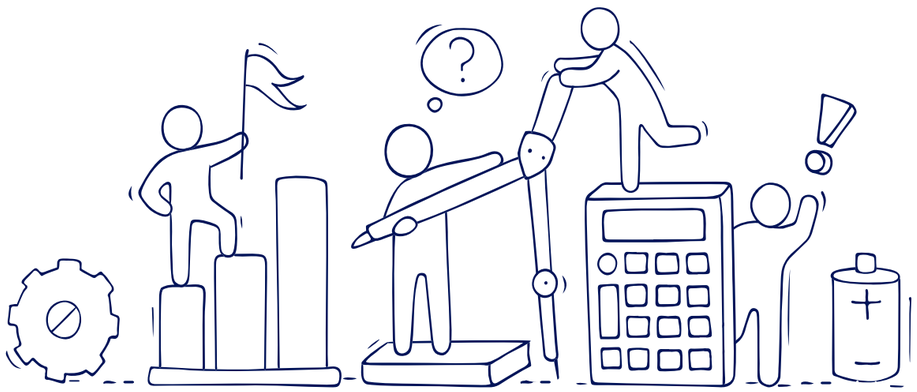


Prepare students to be lifelong problem solvers and thinkers.

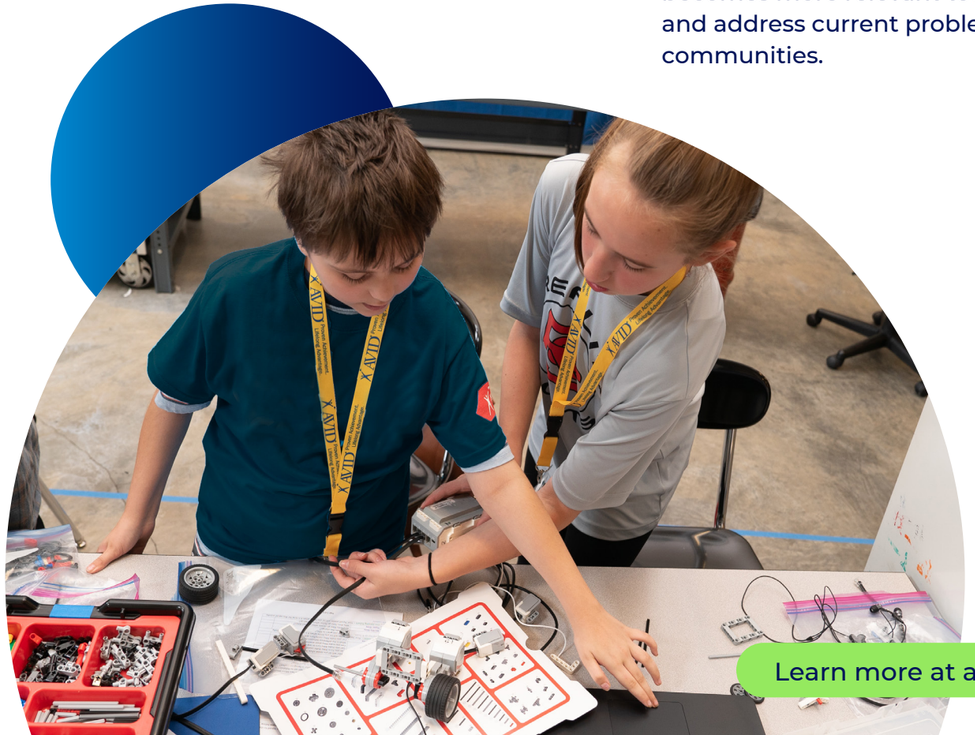
This foundation helps students develop their skills as universal problem solvers in any academic discipline, field of study, or real-world challenge. Design thinking has similar characteristics to other problem-solving processes, while expanding on those frameworks by starting with empathy—understanding the wants and needs of those impacted by the problem. This becomes more relevant today as students understand and address current problems in their local and global communities.

Lessons are based on the 5E instructional model.

AVID STEM Connections uses the 5E model of instruction in the student lessons for each grade band. This model shifts the instruction to a student-centered approach while moving systematically through five intentional phases: engage, explore, explain, elaborate, and evaluate.



Engage → Explore → Explain → Elaborate → Evaluate



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The five phases of the 5E model build upon each other and allow students to deeply engage with the material while taking ownership of their learning.

- Lessons developed by teachers and for teachers
- Full lessons (45 minutes) and mini-lessons (15–20 minutes)
- 4 lessons available per grade band per publication (October and December 2020, monthly January – May 2021)

Building Problem Solvers Through Experience

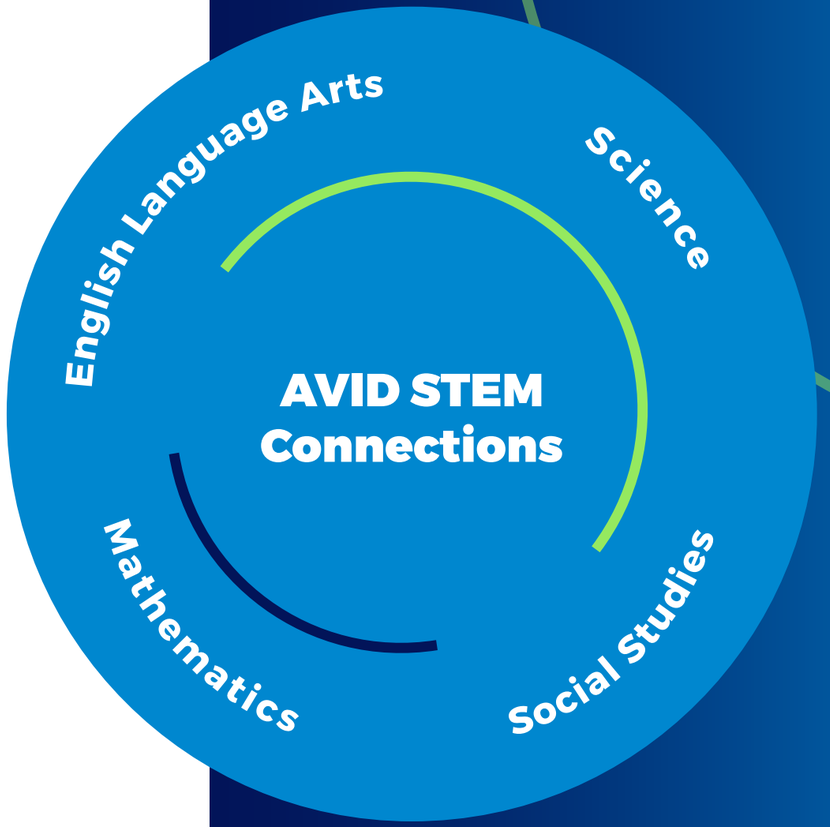
K–2 and 3–5 Grade Bands

- Problem-solving focus
- Focus on design thinking process
- Multidisciplinary approach
- STEM lessons that integrate literacy strategies
- Interactive investigations
- Standards-aligned lessons

6–8 Grade Band

- Global problem-solving focus
- Focus on design thinking process
- Multidisciplinary approach with STEM lessons for math, science, English language arts, and social studies classrooms
- Interactive investigations
- Standards-aligned lessons

A Common Language for STEM Across Disciplines



Lessons are scaffolded to encourage the integration of STEM and problem solving into every classroom.

- Diverse lesson materials utilize the design thinking process to promote a deeper application of content-specific concepts.
- STEM and problem-solving instruction, through the lens of design thinking, promote integration of critical thinking and future-ready skills across content areas.
- Multidisciplinary approach to STEM instruction as a collective effort develops critical academic and emotional mindsets.
- Curriculum structure encourages interdisciplinary design thinking as a “common language” among content areas.
- STEM and design thinking become part of the culture of a school, transcending the walls of a single classroom.

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