

# Literacy and STEAM



The core of [STEAM instructional practices and pedagogy](#) lies in transdisciplinary and integrated learning. Incorporating STEAM practices into literacy instructional design can support strong literacy instruction, especially when building vocabulary, comprehension, oral language and speaking skills, and writing ([Kowalski et al., 2025](#); [Literacy in Science / Minnesota STEM Teacher Center, n.d.](#); [National Academies of Sciences, Engineering, and Medicine, 2018](#)).

## ELEMENTARY LITERACY INTEGRATION

Elementary school is often structured with multi-subject classrooms that provide a space where literacy can be integrated into all subjects. For example, educators can incorporate building vocabulary, background knowledge, oral language skills, and writing through:

- **GARDEN EDUCATION:** Students learn background knowledge about the various parts of plants, focus on new vocabulary of the life cycle, and apply reading comprehension through reading the seed packets. Students practice writing through tracking the growth of the sprout and journaling about their observations.
- **SCIENCE EXPERIMENTS:** In experiments following the scientific process, students build vocabulary and sequencing skills by following the steps of the process. Students working in groups on the project build oral language skills along with presenting on the findings.
- **PROJECT-BASED LEARNING:** Students come up with a project they are interested in. For example, “Protect the Planet” where students learn background knowledge and vocabulary on causes of plastic pollution, and coordinate a beach clean up effort. Project based learning is inherently group focused so students have many opportunities to talk, brainstorm and problem solve in groups, building oral language skills.

The Institute of Education Sciences’s publication, [Teaching Academic Content and Literacy to English Learners in Elementary and Middle School](#) highlights some key instructional tips to incorporate vocabulary and background knowledge to support literacy instruction in multiple content areas. More information to support literacy instruction can be found in [Oregon’s Early Literacy Framework](#).

## MIDDLE AND HIGH SCHOOL LITERACY INTEGRATION

Middle and High Schools in the state generally operate as departmentalized structures with specific disciplines taught separately. These structures can also benefit from integrated literacy practices within each course. [Oregon’s Adolescent Literacy Framework and Resources](#) (Section 6) provides details about how literacy instruction is an essential part of all content areas, including math, science, and CTE.



Sample Literacy Integration Lesson:

**DOES SCIENCE FICTION  
PREDICT THE FUTURE?**