SCHOOL LIBRARIAN'S GUIDE TO STEM + LITERACY

Connecting Curiosity, Story, and Innovation in the Library

Why STEM + Literacy Belong Together

School librarians are uniquely positioned to lead the way in connecting STEM (Science, Technology, Engineering, and Math) with literacy learning. In today's world, literacy is about far more than just reading and writing. It is about making meaning, asking questions, solving problems, and communicating ideas in creative ways. STEM and literacy share a natural connection. Both emphasize curiosity, exploration, and critical thinking. Both encourage students to wonder about the world, seek out information, and share what they've discovered. And both provide opportunities for students to create, build, and reflect on their learning journey. Libraries are powerful spaces for this kind of interdisciplinary work. With flexible learning environments, access to a variety of resources, and a commitment to student voice, school libraries are the perfect place to integrate STEM and literacy.

What Does STEM + Literacy Look Like in the Library?

STEM + Literacy doesn't require fancy Makerspaces or expensive technology (although those can be great!). Instead, it starts with a mindset of curiosity and creativity. Here are a few key ways STEM and literacy naturally connect in library programs:

> **1. Inquiry & Research:** STEM starts with questions, and school librarians are experts at helping students ask and explore meaningful questions. Research projects, inquiry cycles, and curiosity-driven exploration align beautifully with both literacy and STEM standards.
> *Example:* Frame a STEM design challenge with an essential question like, *"How might we build a more sustainable school?"* and support students in researching, reading, and gathering information.

> **2. Storytelling & Reflection:** STEM projects aren't just about building. They are about sharing ideas and stories. Whether through writing, digital storytelling, or presenting a prototype,

students strengthen literacy skills when they communicate their STEM thinking.

Example: After a makerspace project, have students create a digital story or picture book about the problem they solved, the process they used, and what they learned along the way.

3. Computational Thinking & Coding: Coding is a language, and it shares many skills with traditional literacy: sequencing, pattern recognition, and clear communication. Story-based coding challenges or interactive storytelling with tools like Scratch are a great way to blend STEM and literacy.

Example: Host a "Code a Story" event where students create interactive versions of their favorite books using simple coding platforms.

4. Design Thinking & Creativity: Design Thinking emphasizes empathy, brainstorming, prototyping, and reflection - all of which align with literacy practices like perspective-taking, narrative writing, and problem-solving.

Example: Connect a STEM design challenge to a book. For example, after reading *Rosie Revere, Engineer*, challenge students to design and build their own invention to solve a community problem.

Practical Ideas for STEM + Literacy in the Library

Here are some easy entry points for bringing STEM and literacy together:

- **Curate a STEM book collection:** nonfiction, biographies of inventors, picture books with problem-solvers, and stories about innovation.
- **Offer STEM-themed storytimes:** pair read-alouds with simple maker challenges or science experiments.
- **Create research stations:** support STEM fair projects with tools for credible research, citation, and presentation.
- **Host design challenges:** connect them to literacy themes like community, sustainability, or storytelling.
- **Support digital literacy:** teach students to create podcasts, videos, infographics, or blogs to share their STEM learning.

At its heart, integrating STEM and literacy is about creating a culture of curiosity, creativity, and connection. It is about helping students see themselves as readers, researchers, makers, and problem-solvers, all at once. School librarians are already experts in creating these kinds of learning experiences. By intentionally connecting STEM and literacy, librarians can empower students to read widely, think deeply, and create boldly.