

Integrating STEM into ELA



“Picture books, both fiction and nonfiction, are more likely to hold our attention and engage us than reading dry, formulaic text. ... Engagement leads to remembering what is read, acquiring knowledge, and enhancing understanding.”

S and A. Goudvis. 2007. Strategies that work: Teaching comprehension for understanding and engagement. Portland, ME: Stenhouse Publishers., p. 46. Add a little bit of body text

Beaty, A. (2018). Iggy Peck, Architect. Dreamscape Media

Stewart, M. 2014. National Geographic kids: robots New York : National Geographic Children's Books

Shakespeare, W., & Dolan, F. E. (1999). The winter's tale. New York: Penguin Books

Morgan, E. R., & Ansberry, K. R. (2017). Picture-perfect STEM lessons, K-2: Using childrens books to inspire STEM learning. Arlington, VA: National Science Teachers Association.

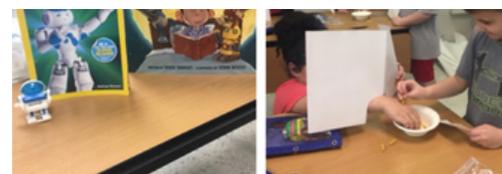
Workshop Goals

- Learn how to integrate ELA standards with children's literature into the STEM curriculum .
- Learn the components of a STEM lesson.
- Learn to use the 5E Lesson Plan & Engineering Design Process to develop engaging STEM lessons



How to Begin a STEM or Lesson or Unit or Project Based Lesson

1. **Start with the content** (e.g. Science, Technology, Engineering, Mathematics, Social Studies, English Language Arts, Fine Arts, Library Media, Physical Education...).
2. **Enduring Understanding:** Identify a real world problem.
3. **Essential Questions:** Begin to ask questions that would explore the problem and eventually solve the problem.
4. **Transdisciplinary Connections.** Students ask questions, investigate global issues, solve problems or meet challenges that connect to science, technology, engineering, mathematics, and other disciplines.
5. **STEM Standards of Practice:** Engage in meaningful, purposeful, and relevant STEM activities using the Stem Standards of Practice Framework Instructional Guide; student skills and knowledge, instructional



Elementary STEM Unit Planning Guide

<p>Title: This is descriptive statement about the lesson/ unit/ unit</p> <p>Overview: This is a summary of what students will learn in the unit. It explains the unit's focus and real-world connections.</p> <p>STEM Standards of Practice: Engage in meaningful, purposeful, and relevant STEM activities using the Stem Standards of Practice Framework; student skills and knowledge indicators, instructional examples, resources and glossary.</p> <p>STEM Proficiency: students will be able to apply all seven Standards of Practice when demonstrating how to answer complex questions to investigate global issues, and to develop solutions for challenges and real-world problems.</p>				<p>Teacher:</p> <p>Grade:</p>	
<p>Real World Connection:</p> <p>Product / Prototype:</p>				<p>Real World Connection:</p> <p>Product / Prototype:</p>	
<p>Science</p> <p>Technology</p> <p>Engineering Design Process</p> <p>CCSS Mathematics Practices</p>	<p>CCSS ELA</p> <p>Social Studies / Fine Arts</p>	<p>Transdisciplinary Connections: Questions, issues, problems or challenges to real world connections between Science, Technology, Engineering, Mathematics, and other disciplines.</p> <p>Enduring Understanding: Identify a Real World Problem: "Domestic Dogs All Over the World" Problem-based Learning (e.g. There are many dogs who do not have a family to live for them in a home (e.g. indoors or outdoors).</p> <p>Essential Questions: Begin to ask questions that would explore the problem and eventually solve the problem; explore the STEM fields that correlate with content covered in the unit.</p>			