

ASLA STEM Literacy by Design:
Introducing Landscape Architecture with Story Time

K-12 Landscape Architecture Education

An Interdisciplinary Curriculum Guide for Art, STEM
and Vocational/Trade Educators



By Arnaldo D. Cardona

Edited by Dale C. Davis

(Image: K-12 Landscape Architecture Education: An Interdisciplinary Curriculum Guide for Art, STEM and Vocational/Trade Educators, Arnaldo Cardona, ASLA)

About STEM Literacy by Design

With the number of licensed women landscape architects on the rise, National ASLA invites all chapters to continue its outreach engagement with girls with STEM Literacy by Design.

Intended for elementary school girls, this special initiative of ASLA Career Discovery and Diversity promotes the importance of STEM literacy education while introducing young girls to the design of outdoor spaces with natural environments.

Launched during Women's History Month 2024, ASLA's STEM Literacy by Design initiative hopes to encourage young girls to explore landscape architecture using fun, poetic, and colorful books published by ASLA members. Our growing book collection centers on the adventures of young girls who find their passion, courage, and "girl power" in the great outdoors. Drawing on STEM literacy principles, each book can help young readers strengthen science, technology, engineering, and math comprehension.

Guided Strategies for Story Time (or Read-Alouds)

Story time is much more than the act of reading to children. It is an opportunity to immerse students at any grade level in a shared reading experience that motivates ongoing explorations in a particular subject matter.

This guided provides a summary of strategies from the publication [*K-12 Landscape Architecture Education: An Interdisciplinary Curriculum Guide for Art, STEM and Vocational/Trade Educators*](#) written by Arnaldo Cardona, ASLA. Cardona offers proven techniques to incorporate key themes, STEM concepts and skills, design principles, and picture vocabulary. With a Bachelor of Science degree in Landscape Architecture and two master's degrees - Education and Art Education - Cardona's research expertise is in balanced literacy, critical thinking, portfolio assessment, and interdisciplinary curricula that use architecture and the urban landscape as central themes. Learn more about Cardona at the end of this guide.

Getting Started

I. Analyz the Cover (Observation and Letter Recognition Skills):

- Read the title.
- Point out letters.
- Emphasize beginning and ending sounds
- Read the name of the author

II. “Picture Walk” through Selected Pages (Prediction Skills):

- Ask, “*What do you think this book is about?*”
- Allow a few students to respond.
- Thank them for their responses and say, “*Ok, let’s see what this book is about.*”

III. Read Aloud (Listening Skills):

- After reading one or all of the stories, give students a few seconds to respond with applause or brief comments, then say, “*Now, let’s make sure we understood the story, what we saw, and what we learned.*”
- Consider asking the following questions:
 - *Who is (are) the main character(s) of the story?*
 - *What happened at the beginning, middle and end of the story?*
 - *What is the “Big Idea” of this story?*
 - *What themes do you remember hearing or seeing throughout the story?*
 - *What was your favorite story and why?*

IV. Word Study (Vocabulary Skills):

- As you read each story, look for rhyming words, beginning/ending sounds and new words.
- Pay attention to high-frequency words (in, on, the, he, etc.).
- Highlight design-centered words, like “Landscape Architect” or “Park”.
- If time and space allow, consider creating a word wall with design-centered words.
- Play the Snap & Clap game with words “Landscape Architect” or “Park” (watch webinar recording).

V. Emphasize STEM Skills (Elementary)

- Science Skills - ex. asking questions, defining problems.
- Science Vocabulary and Concepts – ex. use the books provided in your toolkit to identify scientific words and concepts.
- Math Skills - ex. listing and counting..
- Design Skills - ex. composition and organization of elements

- Problem-Solving Skills - ex. what real-world challenges are being addressed (environmental, design, etc.).

VI. Closing Remarks: (Reading Comprehension Skills - Reinforcing Main Concepts)

- Consider asking the following questions:
 - *Now, do you what a landscape architect is?*
 - *Do you know what landscape architects do?*
 - *Who wants to be a landscape architect?*
 - *Guess what? I am a landscape architect! Let me tell you what I do.* (If possible, connect your work to the content of the stories.)
- Thank students for letting you spend time with them.
- You may conclude by saying, “*Remember, being a Landscape Architect is fun!*”

About Arnaldo Cardona, ASLA



Arnaldo D. Cardona's first Bachelors was a pre-professional degree in Architecture from the University of Puerto Rico. He became a licensed Landscape Architect in Puerto Rico in 1999, practicing until 2015. His Bachelors of Science in Landscape Architecture and his Masters in Education are from City College of New York. He also holds a Masters in Art Education from Teachers College, Columbia University. Cardona's Graduate research was in the areas of Balanced Literacy, Critical Thinking, Portfolio Assessment and Interdisciplinary Curricula that use architecture and the urban landscape as central themes. Cardona became a fully licensed special education, bilingual, art teacher and staff developer at NYC Public Schools and implemented K-12 programs in Architecture and Landscape Architecture while working as a teacher in Brooklyn, Manhattan, Staten Island and the Bronx. Cardona has taught courses in Assessments in Special Education, Seminar Courses, Art and Math in Classroom Settings at Lehman College, New Jersey City University and was a facilitator at Boricua College. While working as a teacher, Cardona had his design-build business. Cardona is a retired schoolteacher and landscape architect. He has been an ASLA member since 2005 and was a member of ASLA's Committee on Education. Currently, he is a Teacher Supervisor at Virginia Commonwealth University's Art Education Department where he observes future teachers and reflects with them on effective teaching practices. Cardona is the author of two books, [K-12 Architecture Education](#) (2022) and [K-12 Landscape Architecture Education](#) (2021).