



TN Science Standards and AASL National Standards

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Incorporating Science...

When we think about incorporating Science into libraries...

- What kinds of things do you immediately imagine?
- What are some advantages?
- What seems a little spooky?



Tennessee Science Standards



Why Science?

“The National Science Teachers Association (NSTA) affirms that learning science and engineering practices in the early years can **foster children’s curiosity and enjoyment in exploring the world around them** and lay the foundation for a progression of science learning in K–12 settings and **throughout their entire lives.**”

NSTA (2014). Position statement on early childhood science education. Retrieved from <http://www.nsta.org/about/positions/earlychildhood.aspx>



Scientific Literacy \neq Literacy in Science

Scientific Literacy

- Understand and communicate science concepts so that they have a personal meaning in everyday life
- Making informed decisions based on science knowledge

Literacy

- Read, write, speak, listen, and make sense of text

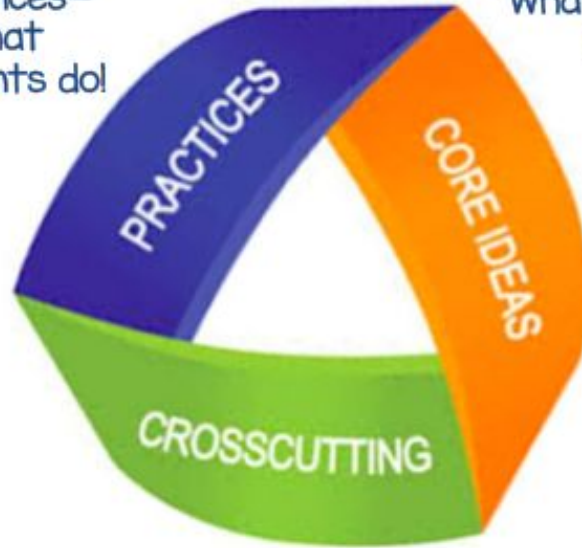
Students need both in the science classroom to communicate in the scientific world!



New TN Science Standards

Science and
Engineering
Practices—
What
students do!

Disciplinary
Core Ideas—
What students
know!



Crosscutting Concepts—
How Students
Think about Science!



Science and Engineering Practices: Looking at SEPs in Depth



Asking Questions and Defining Problems

SEP 1: Asking Questions and Defining Problems

- AASL I.A.1: Formulating questions about a personal interest or a curricular topic
- AASL III.A.3 Deciding to solve problems informed by group interaction
- AASL IV.A.1: Determining the need to gather information
- AASL V.A.2: Reflecting and questioning assumptions and possible misconceptions
- AASL V.B.1: Problem-solving through cycles of design, implementation, and reflection



Asking Questions and Defining Problems

SEP 1: Asking Questions and Defining Problems

<https://www.youtube.com/watch?v=LJJoKxDsyoQ&feature=youtu.be>

- What feels familiar?
- What feels like a stretch?
- What new possibilities do you see for library programming?



Planning and Carrying Out Investigations

SEP 3: Planning and Carrying Out Investigations

- AASL I.B.1: Using evidence to investigate questions
- AASL I.B.2: Devising and implementing a plan to fill knowledge gaps
- AASL IV.A.2: Identifying possible sources of information
- AASL IV.B.3: Systematically questioning and assessing the validity and accuracy of information
- AASL V.B.2: Persisting through self-directed pursuits by tinkering and making
- AASL V.C.2: Co-constructing innovative means of investigation



Planning and Carrying Out Investigations

SEP 3: Planning and Carrying Out Investigations

<https://www.youtube.com/watch?v=QTfcyGIVVWo>

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Next Steps



What NOT to Do

- Freak out
- Try to be a science teacher



What to Do

- Study the new AASL Standards and look for connections with the SEPs
- Enrich your research and inquiry lessons with the SEPs
- Help your teachers look for ways to have kids DO science, not just read about it
- Do makerspace the right way
- Make sure your collection, both print and digital, supports both science literacy and literacy in science



Resources to Help You

- NSTA Science and Engineering Practices:
<http://ngss.nsta.org/PracticesFull.aspx>
- NSTA Crosscutting Concepts:
<http://ngss.nsta.org/CrosscuttingConceptsFull.aspx>
- NSTA Disciplinary Core Ideas:
<http://ngss.nsta.org/DisciplinaryCoreIdeasTop.aspx>
- Bozeman Science NGSS videos: <https://goo.gl/Rz98bn>
- Brief explanations of important concepts:
<http://stemteachingtools.org/tools>