Elementary Science Video Workshop Resource Guide

Theory of Adult Learning for your Community of Practice:

Learning happens when adults…

- Are supported in their growth regardless of their strengths especially by having opportunities to apply ideas in new settings
- Participate in authentic, valued activities in real settings
- Have opportunities to view and understand whole process
- Have opportunities to practice with others in activities appropriate to their relationship to the target practice
- Engage in social interactions over time
- Are valued for their strengths
- Observe/engage/identify with experts/images of target practice
- Have opportunities to engage in routines that help them deepen their engagement in target practices, including those that help them enter, reenter and progress deeper into a community
- Have access to learning resources inside and also outside the group

(from Meredith Honig, lecture, University of Washington, December 9, 2016)

This learning resource will engage you and your colleagues in learning more about the importance of elementary science. You will build awareness and learn more about how to engage in this target practice in your own setting. We envision this professional learning taking place in an ongoing community of practice. We encourage you to determine and proceed at your own pace that reflects the needs of your team.

Adult Learning Strategies you might consider when leading this learning:

- Joint Work Moves – Joint enterprise through participation in a collaborative effort
    - By working through the provided learning tools, you and your team will be able to collaborate to improve elementary science in your context.
- Meta-Cognition – Moves that increase a learner's awareness of subject matter and their own learning
    - Reflection questions and a self-assessment are embedded into each of the learning tool subsections. Consider adding additional questions that fit your unique context.
- Differentiation – Different avenues to learning that match the learner's readiness, interests, and preferred modes of learning

---

This Resource Guide was developed by Scott Seaman (AWSP) and Amber McCulloch (OSPI) as a companion document for the Why Elementary Science video.

- This professional learning includes a variety of modalities to meet the diverse needs of our learners. You can proceed through the learning tools based on readiness. A number of the resources allow you to go deeper based on interest.

This resource guide will take you through the Self-Assessment and 5 learning tools you will be utilizing as part of this video-based professional learning. Ensure that you have a copy of the Self-Assessment; you will use this as you work through the 5 learning tools and then move into action planning. As you use each learning tool, download using the link provided and make sure you and each member of your team has access. Note that a number of the resources can be accessed electronically and include links to additional resources, should you want to go further with your learning.

Before getting started, *please complete* a very brief, 2-question pre-survey to help us gather information related to the usefulness of this video format and the learning tools that are included. We ask that you and each member of your team complete the survey (1-2 minutes).

Take the survey at **http://tinyurl.com/WAElemPre.**

Learning Tool 1

STEM Teaching Tool--Why do we need to teach science in elementary school?
http://stemteachingtools.org/brief/43

After reading through this learning tool, reflect and respond to the following questions:

- Do you view ELA and math instructional time to be at odds with the teaching of science? Have you considered integrating ELA and math into science investigations?
- Who gets science in elementary school? Are students pulled-out for other services?
- On average, how many science instructional minutes do your students receive each week? 300? 150? 30? Fewer? What factors shape that quantity? Does this vary by grade level or by teacher?
- Is there a great deal of variability? What does this tell you about possible action steps?

Now complete sections T1-T3 (Teaching and Learning) on the Self-Assessment

Learning Tool 2

NGSS—An Overview for Principals
http://www.bit.ly/esvlt-2

Before reading, individually respond (on paper, a notecard, or electronically): What are the NGSS?

Read through the document. Are there any additional ideas you would add to your original response? Discuss:

- What kinds of professional learning is required for your teachers and how will you ensure your teachers have access to it?
- How can we connect the NGSS with work we are doing to improve teaching and learning in English language arts and math?
- What is your role in supporting your teachers with NGSS implementation?

Now complete sections L1-L3 (Leadership) on the Self-Assessment

Learning Tool 3

STEM teaching Tool--What School Building Administrators Should Know About the New Vision for K-12 Science Education
http://stemteachingtools.org/brief/21

Discuss the following reflection questions as a group:

- How diverse are all of the science classes at your school? Are students from different backgrounds equitably represented? Why or why not?
- Have you engaged your faculty and district staff in conversations about where to start implementation?
- Do you develop "horizontal" teacher communities within your building? How can you support meaningful PD?
- How can you financially resource this new vision of instruction?

Now complete sections C1-C2 (Community Awareness and Partnerships) on the Self-Assessment

Learning Tool 4

New Vision for Science Education
https://nextgenscience.org/sites/default/files/resource/files/NewVision.pdf

Imagine walking into a science class in your school. What would you see? What would students be doing? What would teachers be doing? Using sticky notes, record your ideas--one idea per sticky note.

Where on the table would you add your sticky notes? What would it take to move toward the items in the right-hand column?

As a group reflect on the questions: what implications are there for next steps and action planning?

Now complete sections T4-T6 (Teaching and Learning) on the Self-Assessment

Learning Tool 5

Science Practices Continuum
http://www.sciencepracticesleadership.com/uploads/1/6/8/7/1687518/supervision_continuum_v4.pdf

Read over the Science Practices Continuum. How does it compare/contrast with the previous four learning tools?

Watch this video from 2:29-5:30. What Science Practices can you observe? At what level would you rate your observation using the Science Practices Continuum?

https://www.teachingchannel.org/videos/claims-evidence-science-lesson-achieve

For additional tools to support supervision in science, visit **http://www.sciencepracticesleadership.com/supervision-tools.html.**

Now complete sections S1-S2 (School Culture and Structures) on the Self-Assessment

Principal Leadership Paradigm

Culture Sets the Foundation. Systems Support the Culture. Learning Shows the Belief

School Improvement Planning Document**: http://www.awsp.org/awspdocuments/School-Improvement-Planning-Tool.docx**

5 Years From Now Document:
http://www.awsp.org/awspdocuments/5%20Year%20Planning%20Tool.docx

---

Post-Survey

Please complete our post-survey to help us gather information related to how well the learning tools and resources are working. We ask that you and each member of your team complete the survey (1-2 minutes). This survey can be found at **http://tinyurl.com/WAElemPost.**