RURAL SCIENCE TEACHING PROJECT: ROLE OF FORESTS IN EARTH ENERGY DYNAMICS: *DAY TWO*

Structure and Content of the NGSS and CCSS-ELA Considering a Sample Lesson Connecting NGSS and CCSS-ELA to Carbon Storage Activities Concluding Discussion
**Explorations: Role of Forests in Earth Energy Dynamics**

**Next Generation Science Standards (NGSS):**
- LS1: From Molecules to Organisms: Structures and Processes
- LS2: Ecosystems, Interactions, Energy, and Dynamics

**Common Core State Standards for English Language Arts & Literacy (CCSS-ELA):**
- RST1: Textual evidence
- RST2: Central ideas or conclusions
- RST4: Meaning of domain-specific words
- WHST1: Discipline-focused arguments
- WHST2: Informative/explanatory texts

**Content-Area Literacy:**
- Analysis and Interpretation to comprehend scientific texts and materials
- Vocabulary knowledge and academic language across scientific reading and writing demands
- Writing to Learn (WTL) strategies for understanding science content and developing academic writing skills

**Connections to Practice and Student Learning Impact:**
- NGSS Crosscutting Concepts: Patterns, cause and effect, energy and matter, stability and change
- NGSS Science and Engineering Practices: Developing and using models, analyzing and interpreting data, constructing explanations and designing solutions, engaging in argument from evidence
- Literacy Strategies for understanding science: Asking questions to monitor comprehension, word knowledge skills, understanding text features for reading and writing, developing writing fluency and genre knowledge
- Integration of NGSS and CCSS with curriculum and activities, increased understanding of Smarter Balanced assessments
Key Questions

1. What do the standards expect? How are they organized?
2. How might the standards be aligned with instruction?
3. What skills and strategies must students use to demonstrate understanding of science concepts?
4. How might we teach these skills and strategies?
Examine the NGSS standards from middle levels through high school

1. How does the content change?
2. What connections can be made between the learning progressions and the content and sequence of the standards?
3. What connections can you make to yesterday’s field experience?
Consider connections between NGSS and specific CCSS-ELA (RST and WHST)

1. Find specific Common Core RST and WHST standards listed on the NGSS and find them in the CCSS-ELA document
2. What do you notice? How might these connections relate to classroom practice?
3. Looking at one RST or WHST standard across grade levels (6-12), what do you notice?
4. Choose one grade level and look at the set of 10 RST or WHST standards. What do you notice?
Considering a Sample Lesson:

1. Select either the middle level or high school level lesson

2. Review lesson materials and resources, finding connections to NGSS and CCSS-ELA

3. Sketch ideas on the thinking sheet (handout) for how these sets of standards might be integrated with the lesson to deepen student understanding of key concepts

4. What skills and strategies might be taught to facilitate student understanding?
Instructional Strategies for Writing

- **Brainstorming** (Daniels, p. 45). Carbon cycle lesson formative assessment probe. **WHST 10, Range of Writing**

- **Writing Break** (Daniels, p. 31). Carbon cycle student activity. **WHST 1a, Introduce a Claim, WHST1b, Support Claim with Reasoning**

- **Reflective Write** (Daniels, p. 96). Carbon cycle student activity. **WHST 2d, Precise Language and Vocabulary. WHST 7, Conduct Short Research Projects to Answer a Question**
Concluding Discussion

**Future Workshop Dates:**
March 28-29
May 16-17
August 12, 13, 14

**Webinars**

**Exit Survey**
http://www.onrc.washington.edu/Outreach/