How to Sneak your Science into ELA (and vice versa)!
Sarah Livesay  s.livesay@comcast.net  (217) 469-0289

- **Suggestions for Selecting Quality Environmental Literature**
  - Scientific Accuracy
  - Must not over-anthropomorphize species

- **Importance of Environmental Education to Development (social, educational, psychological)**
  Resource: *Ecophobia*, Dr. David Sobel
  Resource: University of Illinois Landscape and Human Health Research
  Resource: *Last Child in the Woods*, Richard Louv
  - (3) Stages of Environmental Education; Appreciation, Exploration, Social Action

- **Preview of Genres Pairings of focus during Session**
  - Nonfiction: Creative (Literary) nonfiction, Informational Text
  - Fiction: Ecofiction

- **Wildfire Ecology & Related Environmental Issues Pairing (MS)**
  *Fire Birds* by Sneed Collard (Inf. Text)
  *Flash Point* by Sneed Collard

  Activity: Project Learning Tree “The Nature of Fire”

- **Trees & Leaves Pairing (K-5)**
  (PreK-2) *A Leaf Can Be...* by Laura Purdie Salas
  *Leaf Man* by Lois Ehlert
  *Leaves* by David Ezra Stein
  *The Giving Tree* by Shel Silverstein
  (3-5) *Meeting Trees* by Scott Russell Sanders
  *My Favorite Tree; Terrific Trees of North America* by Diane Iverson (Inf. Text)
  *My Mother Talks to Trees* by Doris Gove

  Activity: Project Learning Tree “Tree Cookies”
 Threatened Habitat/ Threatened Species Pairing

(9-12) *The Race to Save the Lord God Bird* by Phillip Hoose (Inf. Text)
(5-7) *True Blue Scouts of Sugar Man Swamp* by Kathi Appelt
(9-12) *Endangered* by Eliot Schrefer
(9-12) *Threatened* by Eliot Schrefer
(5-7) *The One and Only Ivan* by Katherine Applegate
(K-2) *Ivan the Remarkable True Story of the Shopping Mall Gorilla* by Katherine Applegate
(2-12) *Gorilla Doctors; Saving Endangered Great Apes* by Pamela S. Turner (Inf. Text)
(K-5) *Where Once There Was a Wood* by Denise Fleming
(K-2) *The Salamander Room* by Anne Mazer

Activity: Project Learning Tree “Life on the Edge”

 Eco-poetry Pairing (2-5)

*Poetrees* by Douglas Florian
*Autumnblings* by Douglas Florian
*Dark Emperor & other Poems of the Night* by Joyce Sidman

Activity: Project Learning Tree “Poet Tree”

 Migration Pairing (K-4)

*Velma Gratch and the Way Cool Butterfly* by Alan Madison and Kevin Hawkes
*Bird, Butterfly, Eel* by James Prosek
*Salmon Stream* by Carol Reed-Jones
*Going Home, The Mystery of Animal Migration* by Marianne Berkes (Inf. Text)
*Flute’s Journey, The Life of a Wood Thrush* by Lynne Cherry

 Educator Resources, Grants & Opportunities:

- Sept. 30: Annual GreenWorks! & Green Schools Grants $1-$3K student-voice restoration/outreach project. Visit [www.plt.org](http://www.plt.org) after online or in-person workshop.

**Illinois Department of Natural Resources**  
[http://dnr.state.il.us/education/classrm/teach.htm](http://dnr.state.il.us/education/classrm/teach.htm)

- November: Schoolyard Habitat Grant $1K
- January: Biodiversity Field Trip Grant $500
- Loan Trunks, classroom posters, activity guides, podcasts
Environmental Education Association of Illinois

www.EEAI.net

Sarah Livesay, Professional Development Coordinator Consultant
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Environmental Education Association of Illinois

Mission: To maintain a vital network that supports and advances quality environmental education throughout the state.

- Professional Development/ Curriculum Support Resources
- PreK-16 STEM-Focused, ISS, CCSS Aligned Materials
- Grant & Award Programs
- ROE-partnered Training
  - ROE 9, 11, 12, 41, 45, 50
  - ISP South Cook
  - Your ROE!
Suggestions for Selecting Quality Environmental Literature

*FICTIONAL characters do a GREAT job at relaying FACTUAL information.*

I. Must be SOUND factual scientific information
   
   Example: “The Very Hungry Caterpillar” cocoon vs. chrysalis situation

II. Must not OVER- anthropomorphize species

Emphasis on Place-Based Selections

Amendment: If (I) is extremely strong, then (II) may be overlooked with supportive explanation

Amendment: Very young children (PreK), will gain from any opportunity to bond with animals (personified or not). Any literature pertaining to the natural world with this age will only further develop the appreciation/ empathy phase of environmental education development
Nature’s Role in Childhood Development

- Platform for Creativity
- Loose Parts Theory
- Increased Mental Health
- Increased Academic Achievement

Beyond Ecophobia by David Sobel
- Three-step approach to environmental education
Empathy
Ages 4-7
Cultivate empathy
Animal relationships
Home is their world

Exploration
Ages 8-11
Asking “How”
Science investigations
Expanding boundaries

Social Action
Ages 12+
Asking “How can I”
Place-based efforts
Social boundaries
Generous Genres

Fiction

- Ecofiction: Ecologically-oriented fiction, which may be nature-oriented (non-human oriented) or environmental-oriented (human impacts on nature).

“Stories set in fictional landscapes that capture the essence of natural ecosystems...[They] can build around human relationships to these ecosystems or leave out humans altogether.” Mike Vasey, Where the Wild Books Are

Nonfiction

- Informational Text: Biographies, technical text, books about history, science, the arts; directions, forms and readings including information conveyed in graphs, charts. Format can be digital. CCSS

- Creative Nonfiction (Narrative/ Literary): “Creative Nonfiction has been described as “dressing facts in fiction” and “true stories well told”. It uses the literary tools of the fiction writer and the careful research of the nonfiction writer. Making facts compelling by creating a storyline or using some type of literary technique”. Carol L. Malnor, Common Core, Making the Connection

“Creative nonfiction happens when an author uses totally well researched facts to create a story- like narrative with NO made up parts”. Institute of Children’s Literature
CCSS English Language Arts Strands

Grades K-12

(RL) Reading Literature
*(RI) Reading Informational Text
*Key Shift in CCSS ELA: Building knowledge through content-rich nonfiction
* 50% elementary/ 70% secondary

(W) Writing
(SL) Speaking & Listening
(L) Language

Grades 6-12

(RH) Standards for Literacy in History/Social Science
(RST) Reading Science & Technical
(WHST) Writing History, Social Science & Technical
A Quick Look at CCSS
K-5 Text Types & Complexity

10: Range, Quality, & Complexity » Texts
Illustrating the Complexity, Quality, & Range of Student Reading K-5

<table>
<thead>
<tr>
<th>Literature: Stories, Drama, Poetry</th>
<th>Informational Texts: Literary Nonfiction and Historical, Scientific, and Technical Texts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Includes children’s adventure stories, folktales, legends, fables, fantasy, realistic fiction, and myth</td>
<td>Includes biographies and autobiographies; books about history, social studies, science, and the arts; technical texts, including directions, forms, and information displayed in graphs, charts, or maps, and digital sources on a range of topics</td>
</tr>
<tr>
<td>Includes staged dialogue and brief familiar scenes</td>
<td>Literary Nonfiction and Historical, Scientific, and Technical Texts</td>
</tr>
<tr>
<td>Includes nursery rhymes and the subgenres of the narrative poem, limerick, and free verse poem</td>
<td>Includes biographies and autobiographies; books about history, social studies, science, and the arts; technical texts, including directions, forms, and information displayed in graphs, charts, or maps, and digital sources on a range of topics</td>
</tr>
</tbody>
</table>

K1
- *Over in the Meadow* by John Langstaff (traditional) (c1800)*
- *A Boy, a Dog, and a Frog* by Mercer Mayer (1967)
- *A Story* by Gail E. Haley (1997)*
- *Ranckes for Breakfast* by Tomie DePaola (1978)
- *Kitten’s First Full Moon* by Kevin Henkes (2004)*

- *My Five Senses* by Aliki (1962)***
- *Truck* by Donald Crews (1980)
- *I Read Signpost* by Tana Hoban (1987)
- *What Do You Do With a Tail Like This?* by Steve Jenkins and Robin Page (2003)*
- *Amazing Whales* by Sarah L. Thomson (2005)*
Professional Development &
Curriculum Support Resources

- Multi-Day, Single Day and ONLINE Professional Development Trainings Available
- Sponsor of three national environmental education curriculum support programs
- Aligned with Common Core State Standards and Illinois Science Standards (NGSS)
- Statewide and online availability at low cost
- Facilitated by biologists/ environmental educators/ROEs
- Science content training with pedagogical embed
- Multi-disciplinary activities which support ELA, Math and Art
- PreK-12 with grade-focus modules available

Visit www.EEAI.net for Current Trainings Statewide
## Correlation of Common Core Standards for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects with Project Learning Tree’s PreK-8 Activity Guide

### Anchor Standards for Reading

<table>
<thead>
<tr>
<th>Grade Levels</th>
<th>PreK-8 Environmental Education Activity Guide</th>
<th>(Numbers correspond to the activity numbers in the PLT Guide; bold PLT activity numbers have a strong correlation to the standard.)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Key Ideas and Details:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>1.</strong> Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.</td>
<td>Reading Standard for Literature #1 (RL 1): 8, 18, 22, 36, 37, 38, 89 Reading Standard for Informational Text #1 (RI 1): 13, 77</td>
<td>Reading Standard for Literature #1 (RL 1): 4, 5, 8, 18, 30, 37, 89, 90, 92 Reading Standard for Informational Text #1 (RI 1): 11, 12, 13, 17, 35, 49, 52, 56, 58, 60, 77, 90, 93</td>
</tr>
<tr>
<td><strong>2.</strong> Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.</td>
<td>Reading Standard for Literature #2 (RL 2): 8, 18, 22, 36, 37, 38, 89 Reading Standard for Informational Text #2 (RI 2): 13, 77</td>
<td>Reading Standard for Literature #2 (RL 2): 4, 5, 8, 18, 30, 37, 89, 90, 92 Reading Standard for Informational Text #2 (RI 2): 12, 13, 17, 35, 49, 52, 56, 58, 60, 77, 90, 93</td>
</tr>
</tbody>
</table>

### Anchor Standards for Writing

<table>
<thead>
<tr>
<th>Text Types and Purposes:</th>
<th>Grades K-2</th>
<th>Grades 3-5</th>
<th>Grades 6-8</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.</td>
<td>Writing Standard #3 (W 3): 8-Enrichment, 18-Enrichment, 47, 62-Enrichment, 63-Enrichment, 74-Enrichment, 76-Variation, 89-Enrichment</td>
<td>Writing Standard #3 (W 3): 4, 5, 7, 8-Enrichment, 9-Enrichment, 18-Enrichment, 26-Enrichment, 40-Enrichment, 44, 62-Enrichment, 63-Enrichment, 76-Variation, 77-Enrichment, 78-Enrichment, 89-Enrichment, 95-Enrichment</td>
<td>Writing Standard #3 (W 3): 4, 5, 7, 8-Enrichment, 9-Enrichment, 18-Enrichment, 26-Enrichment, 40-Enrichment, 44, 63-Enrichment, 77-Enrichment, 78-Enrichment, 89-Enrichment, 91, 95-Enrichment</td>
</tr>
</tbody>
</table>
2015 Wildfire Mapping Sites


http://activefiremaps.fs.fed.us/current
Wildfire/ Ecology and Issues (MS Pairing)
#5 The Nature of Fire (G 6-12)

**Reading Informational Text**

- (RI 1). Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

- (RI 2). Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas. Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others’ ideas and expressing their own clearly and persuasively.

- (RI 3). Analyze how and why individuals, events, and ideas develop and interact over the course of the text. Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.

- (RI 4). Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.

- (RI 6) Assess how point of view or purpose shapes the content and style of text.

- (RI 7). Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.

**Writing (2-10)**

- Literacy in Science & Technical Subjects (1-2, 4, 7)

**Speaking & Listening (1-6)**

- Writing Science & Technical Subjects (2-10)

**Language (1-6)**

**Literacy in History (1-4, 7)**
Do you smell any of the 3-Dimensions (HS LS)?

**Science & Engineering Practices**
- Engaging in Argument from Evidence
- Constructing Explanations and Designing Solutions
- Asking Questions and Defining Problems

**Cross-Cutting Concepts:**
- Cause and Effect
- Scale, Proportion & Quantity
- Stability and Change

**Disciplinary Core Ideas**
- Interdependent Relationships in Ecosystems
- Ecosystem Dynamics, Functioning, and Resilience
- Biodiversity and Humans
Trees & Leaves Pairing (K-5)
# 76 Tree Cookies

Writing K-2

(W3) Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.

Writing 3-5

(W3). Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.

(W4). Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.

(W5). Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.

(W7). Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.

(W8). Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism.
Do you smell any of the 3-Dimensions?
KLS & PS & ESS/4LS & ESS

**Science & Engineering Practices**
- Analyzing and Interpreting Data
- Developing and Using Models
- Asking Questions and Defining Problems

**Cross-Cutting Concepts:**
- Patterns
- Cause and Effect

**Disciplinary Core Ideas**
- Interdependent Relationships in Ecosystems
- Organization for Matter and Energy Flow in Organisms
- Human Impacts on Earth Systems
- The History of Planet Earth
Threatened Species & Habitat Pairings
(2-5) & (5-7) & (9-12)
#88 Life on the Edge

**Speaking & Listening (1, 2, 4, 5, 6)**

- (SL1). Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others’ ideas and expressing their own clearly and persuasively.

- (SL2). Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.

- (SL5). Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.

**Writing (1, 2, 4, 5, 6, 7, 8, 9, 10)**

- (W2). Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.

- (W4). Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

- (W7). Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.

- (W8). Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism.

- (W9). Draw evidence from literary or informational texts to support analysis, reflection, and research.
Do you smell any of the 3-Dimensions (HS, 4, KLS & ESS)?

Science & Engineering Practices
- Analyzing and Interpreting Data
- Developing and Using Models
- Constructing Explanations and Designing Solutions
- Asking Questions and Defining Problems

Cross-Cutting Concepts:
- Cause and Effect
- Scale, Proportion & Quantity
- Stability and Change
- Patterns

Disciplinary Core Ideas
- Interdependent Relationships in Ecosystems
- Ecosystem Dynamics, Functioning, and Resilience
- Biodiversity and Humans
- Human Impact on Earth’s Systems
Eco-poetry Pairings (2-5)
**#5 Poet-Tree**

**Reading Literature (1, 2, 4, 5, 7)**

- (RL1). Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

- (RL2). Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.

- (RL4). Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.

- (RL5). Analyze the structure of texts, including how specific sentences, paragraphs, and larger portions of the text (e.g., a section, chapter, scene, or stanza) relate to each other and the whole.

- (RL7). Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.

**Writing (1, 3, 4, 5, 6, 10)**

**Speaking & Listening (1, 5, 6)**
Migration Pairings (K-4)

- Going Home
- Bird, Butterfly, Eel
- Velma Gratch & the Way Cool Butterfly
- Salmon Stream
- Flute's Journey
Resources: Annual Grants Program

EEAI Annual Mini-Grant

▪ $350.00 towards materials or experiences that help educate students about natural resources & the environment
▪ All Illinois Educators Eligible
▪ Simple Application Due Oct. 31
▪ Visit www.EEAI.net

2016 Recipients

Mother Theresa Catholic Academy, Crete &
IL School District #159, Matteson

▪ Must Attend Project Learning Tree Training
▪ Simple Application Due September 30
▪ Visit www.PLT.org
Annual Awards Program
...& More

John Murray, Clinton Rosette Middle School
2016 EEAI Formal Educator of the Year
- Presented for outstanding, ongoing efforts in infusing environmental education into the schools curriculum.
- Teachers from all subjects and grades are eligible.

Nominations due November 30 at www.EEAI.net

Additional Notes to Note:
Biodiversity Field Trip Grant
- $500.00/teacher
- Application due January

Schoolyard Habitat Grant
- $1,000.00/teacher
- Application due September

Loan Trunks and Packs
- Statewide Check-outs
- No Fee

Visit www.dnr.Illinois.gov
Environmental Education Association of Illinois

www.EEAI.net

Sarah Livesay, Professional Development Coordinator
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