Missouri Environmental Education News
June 2018

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MEEA’s "Not the Standards" Guides to Missouri Learning Standards

by: Jan Weaver, MEEA Executive Director

High School Students in Oregon work in small teams to make thin, biodegradable, bioplastic films from plant starch. Their goal was to create a prototype film that could be used as a patch for dispensing drugs without creating more plastic waste. An activity like this ties together these high school science standards: ESS5A1, ESS3C2, LS1C3, PS1B2 and all of the ETS. MEEA’s "Not the Standards" Guides can help organize standards around solving environmental problems.

Missouri revised all its Learning Standards in 2016. The science standards reduced the overall number of standards while increasing the focus on mastering concepts and use of scientific and engineering practices. Still, with six grades plus middle and high school, and three major content areas, there is a lot of ground to cover if you want to know who is being taught what.

So MEEA is sharing its "Not the Standards" Guides to the Missouri Learning Standards for Earth and Space Sciences (ESS), Life Sciences (LS) and Physical Sciences (PS). Skip to the guides.

Goals of the MEEA NTS Guides
1. To help narrow the search for a specific standard with which a lesson aligns,
2. to make connections and guide curriculum development for standards covered in the same grade,
3. and to provide a map for the development of a concept from Kindergarten to High School so educators know how a concept fits into the big picture, and when might be the best time to teach it based on students’ developmental ages.

How to Use the MEEA NTS Guides
1. If you have a lesson to teach, scan for the core idea, the component and then the learning standard that fits best – then look up the full standard description at https://dese.mo.gov/college-career-readiness/curriculum/missouri-learning-standards
2. If you have an audience to teach, scan across its grade level to see which standards might line up with a lesson you have or would like to create. Proceed as in number 1 above.

Your alignment or curriculum development should be based off of the standards on the Missouri Department of Elementary and Secondary Education website. These include the complete language, including how the standard should be taught using the NGSS Science and Engineering Practices, as well as information about how deep to go into the topic and how it will be assessed. DO NOT rely on the Not the Standards Guides. They are just intended to help you find the standard you need.

To illustrate - below is the table for the LS Learning Standards, from the first and second page of the guide. The left column has the grade, followed by the number of standards in that area for that grade in parentheses (if the number is more than listed on the page, then the remaining standards are on the next page). The top row is the core ideas for the standard, and the second row is the component within each core idea, with the number of standards in parentheses.
MEEA "Not the Standards" Guide for Life Sciences, page 1

For example, 3rd grade has six life science standards, two under LS 1 From Molecules to Organisms, one under A Structure and Function, and one under B Growth and Development of Organisms on page 1. There are four under LS3 Heredity, one under A Inheritance of Traits, one under B Natural Selection, one under C Adaptation and one under D Biodiversity and Humans on page 2. There are no standards for LS2 Ecosystems or LS 4 Biological Evolution in 3rd grade.

MEEA "Not the Standards" Guide for Life Sciences page 2

Note that LS4 Biological Evolution doesn't show up until Middle School, but its foundation goes back to 1st grade when students observe that young are similar to adults. Or that sensory processes are only explicitly covered in 4th grade (LS1 D), though they can certainly show up body system functions (LS1 A) in Middle School and interacting systems (LS1 A) in High School.

Once you have found a likely standard from the "Not the Standards", note the Strand, ESS, LS or PS, then the core idea (number 1 - 4), then the component (letters A - E), and last the learning standard number for the grade of interest. For example, the 6-8 grade water cycle is ESS.2.C.1 and the 9-12 grade 2nd Law of Energy is PS.3.B.1.

To find the actual standard, visit https://dese.mo.gov/college-career-readiness/curriculum/mo-learning-standards, scroll down the page to Missouri Learning Standards and click on Science. Just below the top section of the page, there are links to download the standards as PDFs or as an excel file. The excel file is nice because you can sort and search the whole file.

Earth and Space Sciences K-12
Life Sciences K-12
Physical Sciences K-12
Engineering, Technology and Applications of Science K-12

Kudos to MEEA and MELAB Members!

City of Springfield receives $300,000 EPA Brownfields Grant to assess hazardous substances and petroleum along Historic Route 66 (College Street and Kearney Street corridors).

Maplewood Richmond Heights MS Receives International Honors for Sustainability. The Green Schools National Network and the Center for Green Schools at the U.S. Green Building Council (USGBC) today recognized Maplewood Richmond Heights Middle School as a winner in the "Best of Green Schools" class of 2018. The jury selected MRHM's nomination as one of only two winners for the K-12 School category.
**CALL for PRESENTERS!**

**Missouri Green Schools and Environmental Education Conference**

**November 2-3, Columbia MO**

**Four Formats - Hands On, Bright Spots*, Table Talks and Posters**

**Three Strands - PreK-5 Curriculum, 6-12 Curriculum, Nuts and Bolts**

*We are seeking youth as well as adult presenters for the 10 minute Bright Spots. If you work with a youth or a youth group 12 to 23 that carried out a project they identified and selected, we would love to hear about it.

**Deadline August 4, 2018**

**Things to Look for (or Look Out for) in June**

- **Great Outdoors Month** - [http://www.greatoutdoorsmonth.org/index.html](http://www.greatoutdoorsmonth.org/index.html)
- **First Week – National Fishing and Boating Week** - [http://takemefishing.org/nfbw/](http://takemefishing.org/nfbw/)
- **Third Week – Pollinator Week** - [https://www.pollinator.org/](https://www.pollinator.org/)
- **First Saturday – National Trails Day** - [http://nationaltrailday.americanhiking.org](http://nationaltrailday.americanhiking.org)
- **5 World Environment Day (annually)** - [http://www.unep.org/wed/](http://www.unep.org/zed/)
- **8 World Oceans Day (annually)** - [http://www.worldoceansday.org](http://www.worldoceansday.org)
- **20 Summer Solstice**

Check out all the **2018 Green Holidays**.

**What to Look for Right Now - MDC's list of What's Out There in June!**

**MEEA News**

- **People Team**
  - **Memberships** - Welcome to new members Cici Faucher, Jessica Kester and Elizabeth Price and Thanks to renewing member Joan Twillman with the Mississippi River Water Trail
  - **Networking** - We had our 13th semi-annual Missouri Environmental Literacy Advisory Board meeting on May 10, hosted by the Missouri Department of Natural Resources. The Green Schools working group aims to have tiers, cross-cutting questions, a commitment letter, draft instructions and a logo done by the fall. Then focus will be on an outreach plan for rollout in 2019. The Leadership Development and Career Exploration working group plans to send a youth program survey to the MELAB list and use responses to set up a database. The Stewardship Group is going to reach out to rural schools to see what it can do to help with recycling. We also had some excellent presentations on a study of climate change education, the MDC Jr. Leader Program, Missouri’s Solid Waste Management Districts, the newly formed Midwest Council of Forest and Outdoor Education and the state’s Sustainable Materials Management program. MELAB is open to any group with EE as part of its mission. Just email weaver@meea.org to get on the list.

- **Purpose**
  - **Conference** - We are looking for PRESENTERS! Check [2018 MOGSEE page](http://www.mogsee.org) for details and to submit a presentation proposal. **DEADLINE AUGUST 4**
  - **Missouri Green Schools** - We are pleased to announce that Bellerive Elementary School, Green Trails Elementary School, W.W. Keyser Elementary School and St. Louis University High School were recognized as 2018 U.S. Department of Education Green Ribbon Schools

- **Resources**
  - **Accounting** - No Updates
  - **Fund Development** - No Updates

- **Governance Team**
  - **Board of Directors** - Due to work conflicts, we were not able to raise a quorum for the board meeting. The board will be voting on the 2017 990 EZ by email. Next board conference call is June 20 at 7 pm. Email weaver@meea.org for the phone number and pin if you would like to listen in.
  - **Administration** - No Updates

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**Coming Up in the Next Two Months**

- **Grants, Contests and Awards Deadlines details here**
  - Captain Planet Ecolution Grants (7/15); NEA Students Achievement Grants and Learning and Leadership Grants (next rolling deadline 6/1); CLIF Bar Family Foundation Small Grants (next rolling deadline 6/1);
  - Karma for Cara (next rolling deadline 7/1); Clark Fund (8/1); DNR Photo Contest (9/1); MDC Community
• **Conferences and Meetings** details here
  - June 19-21 - Sustainability Institute for Educators

• **Workshops and Events around Missouri** details here
  - Night Expedition - June 23 - Northwest
  - The River in Time - June 27 - Northeast
  - Adult Summer Camp: Archery - June 5 - Kansas City
  - Discover Nature Schools: Nature Unleashed - Central
  - Project WET and Project Aquatic WILD - June 23 - St. Louis
  - Nature Revealed - June 7 - Southwest
  - Using and Establishing Natives - June 9 - Ozark
  - Nature’s Night Shift - June 26 to 28 - Southeast

(These count for Environmental Educator Certification categories 1, 2 or 3. Visit the EE Certification page [here](#))

• **Outdoor, Nature, Environmental and Sustainability Event Calendars** - visit our page of organization and agency calendars - if you would like to have your organization’s regularly updated calendar added, email Executive Director Jan Weaver

**EE Jobs** details here

  • Executive Director, Missouri Parks Association
  • Water Resources Director, Missouri Coalition for the Environment
  • Senior Conservation Advocate, Environment America (Missouri)
  • Emergency Response Team Member, Americorps (St. Louis)
  • Educator (Outreach and Distance Learning), St. Louis Zoo
  • Seasonal Education Instructor, Kansas City Zoo

**Teaching and Learning**

*Uncovering Student Ideas in Earth and Environmental Science*, by Page Keeley and Laura Tucker $37.95 at NSTA

*A bionic chandelier that breathes out oxygen*, created by the Victoria and Albert Museum's first Engineer in Residence

Elementary students race solar-powered plastic bottle boats