Missouri Environmental Education News
March 2018

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MEEA at Interface

Teachers in the Weather Math and Science Session collect Weather Data

by: Jan Weaver, MEEA Executive Director

The Interface Conference is the Missouri Department of Elementary and Secondary Education’s annual professional development event for Math and Science Teachers. Interface A serves K-5th grade teachers and Interface B serves 6th-12th grade teachers.

Each year for the past several years MEEA has participated as a presenter at both sessions. This year MEEA's topics were weather (for K-5) and climate change (for 6-12).

Weather Math and Science covered Missouri Learning Standards (MLS) related to Earth and Space Science (ESS) 2D Weather and Climate

- K-ESS 2D1.1 - Use and share observations of local weather conditions to describe patterns over time.
- 1-ESS 2D1.1 - Identify patterns indicating relationships between observed weather data and weather phenomena
- 3-ESS 2D1.1 - Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season
- 3-ESS 2D1.2 - Obtain and combine information to describe climates in different regions of the world.

The first three standards were covered in the first activity - collecting and making use of weather data. Teachers took measurements of temperature, cloud cover, cloud type, recent precipitation, wind direction, wind speed, and air pressure and recorded them in a data collection form. Then they plugged some of the data (cloud type, wind direction and air pressure) into a model to forecast the weather. We discussed the logistics of having students collect weather data over several months (a weather team) and using the data to graph and describe changes in weather over time.

The fourth standard was covered using global and Missouri climate maps to compare and contrast Missouri’s climate with that of other parts of the world. In the global map, geographic regions were color coded by whether they were tropical, dry, temperate, continental, or polar, and then by if and when they had a dry season and how hot or cold the summer was. After determining the colors that characterized Missouri, teachers looked for other places on the global map with similar colors and discussed what plants, animals and crops might do well in those places. The Missouri maps offered a more detailed look at what Missouri’s climate is like.

The session wrapped up with advice on teaching about climate change in the early grades. Don’t. In the MLS, the topic isn’t even mentioned until Middle School. Responsible environmental education takes care not to introduce topics that can be scary to young learners. In practice, if you are going to teach about any scary stuff, you should also be able to present strategies that learners that age can use to address the issue in a substantive way. This doesn’t mean you can’t
teach about things that reduce carbon dioxide, like walking or biking instead of taking a car, it just should not be in the context of global warming.

The thing that students this age should learn is that **data matters**. By collecting weather data every day over a long period of time, a teacher can develop students' confidence in high quality data and their conviction that **claims have to be based on evidence**. This is the most important thing for students to learn, and it will serve them the rest of their lives.

Visit Weather and Science for a more complete description of the activities and links to handouts and how-tos on the tools.

Visit MEEA’s Interface Presentation on Climate Change Math and Science to see some ways to teach older students about climate change. Did you know scientists had discovered that CO2 could absorb heat as early as 1861? Or that they could estimate how much heat the CO2 in the atmosphere absorbed by 1896? By measuring how much of the Moon’s heat was absorbed by our atmosphere? Did you know that the earth "breathes" in CO2 in the summer and "breathes" it out in the winter (in the northern hemisphere), and we have had the data to prove it since the 1960s?

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

Things are really picking up!

- **First Friday - Day of Unplugging** - [http://nationaldayofunplugging.com](http://nationaldayofunplugging.com)
- **Last Saturday - Earth Hour** - [http://www.earthhour.org](http://www.earthhour.org)
- **1 Renewable Energy Day (annually)** - [http://www.doone nothing.org/calendar/energyday.htm](http://www.doone nothing.org/calendar/energyday.htm)
- **11 World Plumbing Day (annually)** - [http://www.worldplumbingday.org](http://www.worldplumbingday.org)
- **20 Spring Equinox**
- **22 World Water Day (annually)** - [http://www.unwater.org/worldwaterday](http://www.unwater.org/worldwaterday)
- **23 World Meteorological Day (annually)** - [http://www.wmo.int/worldmetday/](http://www.wmo.int/worldmetday/)

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

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

**MEEA News**

**People Team**

- **Memberships** - Welcome to these **new** members in February - Stefanie Virgen, Benjamin Montgomery, Stefanie Reubel, Dustin Cook, Mary Holzhausen, Emily Griggs, Melody Clausen, Robin Wellman, Marcia Kallinowski, Brenda Wells, and from Interface: Shelley Albright, Heather Bagley, Diana Barnett, Joe Barnett, Cindy Baxter, Kyna Billue, Betsy Blake, Jamin Bray, Jackie Brown, Malinda Brownfield, Debi Campbell, Kyliegh Chappell, Shontel Cross, Shannon Devries, Shawn Duensing, John F. England, Crystal Ford, Jan Garner, Dean Grassie, Erin Graves, Renee Gregory, Yvette Harris, Christina Hughes, Brittany Ide, Patricia Kelly, Anna Leach, Tracy Leonar, Barb Lovercamp, Kim Luettjen, Bethany Mahner, Paul Markovits, Emmy McDannald, Michelle McDonald, Renee Nickelson, Betsy O’day, Holly Pasha, Amy Peoples, Tina Portell, Rhonda Preston, Mary Beth Sapper, Brenda Schnettler, Frank M. Severino, Brian Sigmund, Kerry Speck, Abby Thompson, Amanda Todahl, Niki Tyler, Debbie Wallace, Karen West, Suzanne White, Lauren Wingate, Jill Winkler, Paige Witter. A big thanks to these **renewing** members - Katie Belisle Iffrig, Glenda Abney (for Earthways Center), Mary Patterson (for St. Louis County Health Department), Betsy Criles, Jamie Paige, Sheila Voss, Matthew Magoc, Meredith Donaldson, Margaret Lilly, Paul Taylor, and Ronna Haxby.

- **Networking** - Executive Director **Jan Weaver** tabled and presented at the Missouri Department of Elementary and Secondary Education Interface Conference. She presented on Weather Math and Science and Climate Change Math and Science. Board Member **Kristen Schulte** attended the 36th Annual Residential Outdoor Environmental Education Conference in Potosi.

**Purpose Team**

- **Conference** - The theme of the 2018 MO Green Schools and Environmental Education Conference is "Taking Learning Outdoors". The conference will be Friday and Saturday November 2-3. Tentative plans include PreK-5, 6-12, and Non-Formal Strands. The committee also discussed the idea of a strand featuring youth presentations. Let us know what you think of the idea and if you have suggestions for what it should look like. Email weaverj@misseouri.edu with your ideas.

- **Missouri Green Schools** - We are in the process of finalizing the nominations for the US Department of Education's Green Ribbon Schools. Look for an announcement some time in March.

**Resources**

- **Accounting** - We are still in the process of identifying accounting services and a company to handle payroll processing.

- **Fund Development** - Jan Weaver will prepare the paperwork for the annual Missouri Environmental Fund application. MEF is a workplace giving program. Please look for it when your employer provides opportunities to sign up for workplace giving!

**Governance Team**

- **Board of Directors** - The board met by phone February 20th. They accepted the revised version of the 2017 MOGSEE Sustainability Report. Based on the findings in the report MEEA will undertake supporting
carpooling and other alternative modes of transportation to the conference and will explore the role of meat and cheese in the lunch offerings as a way to reduce the carbon footprint of the conference. The conference budget was approved and the board and committee will seek donations to help keep fees low. The board discussed making the conference sessions eligible for CEU credits, and agreed we need to do more research to find out what the criteria are. The board also discussed nominations to the board, drafting a job description for Executive Director that reflects the information from Jan’s desk audit, and the format for the monthly financial report. The meeting closed with a sincere expression of thanks to these board members whose current terms are ending: President Susan Flowers, Treasurer Elizabeth Petersen, Board Member Phyllis Balcerzak, Board Member Kristen Schultz. Thanks so much for your service this last year!

- Administration - Jan is compiling the applications for the 2018-2019 board elections.

- Grant Funding
  - New Grants - Jan is working with Kansas, Iowa and Nebraska to apply for an EPA Environmental Education Grant.

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Coming Up in the Next Two Months

- Grants, Contests and Awards Deadlines more info here

- Conferences and Meetings more info here
  - April 4-7 Greater Kansas City Science and Engineering Fair
  - May 10-11 - Integrating the Missouri River in Your Classroom
  - June 19-21 - Sustainability Institute for Educators

- Workshops and Events around Missouri more info here
  - St. Joseph - Snakes Alive (2) - March 17
  - Kirksville - Printmaking with Nature (2) - March 14
  - Blue Springs - Landscaping with Native Plants: Planting for Butterflies (2) - March 24
  - Mexico - Nature Revealed (1) - March 31
  - St. Charles - Nature Unfolds (1) - March 30
  - Lamar - Tree Selection and Planting Workshop (2) - March 8
  - Winona - Owl Prowl (2) - March 31
  - Cape Girardeau - Invasive Species (2) - March 15

(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 more info here

- Program Specialist, Greater Des Moines Botanical Garden
- Zoo Education Interpreter, St. Louis Zoo
- Education Instructor, Part Time, Kansas City Zoo

Feature MEEA Resource: Cloud ID Guide

A one-page guide to the principle types of clouds (there are many more kinds) associated with particular weather systems. Click on the image to download the document.