

Coaching Science Olympiad Meteorology for the Non-meteorologist!

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October 20, 2017

Goals for Presentation:

Present ideas and resources so someone with limited knowledge of meteorology can prepare students to compete in the SO meteorology event using minimal time and money.

Methods/Tips:

- Use the event description as your go-to plan for studying the event!
- Consider the resources on the National Science Olympiad website as first resources. www.soinc.org. I have reviewed/described the websites to save you time.
- Students do the work as much as possible....they learn the most and you can help with other events if you need to do so. Assign research topics for students to learn and present to others in the event. (Soon I will give you a gift that I would have loved for this event!)
- Use a cloud storage so you and students can share and access information. I use Google Drive because the students are most familiar with it. Other possibilities are discussed in this article: <http://www.networkworld.com/article/2932962/cloud-storage/19-free-cloud-storage-options.html>
- Use frequent practice quizzes....online, student-created or coach-created.....to assure students are learning the material....this is a way to rank students in the event if you are fortunate enough to have several students who are interested in the event.
- Create Question Bank A question I will use sometime: Describe the safety considerations of an impending weather event (blizzard, hurricane, thunderstorm, dust storm) and ask for how to prepare for the event. Include pets, power outage, communication, food & water, health and safety, etc. Use as tie breaker.
- Use an "exit card" to monitor if students are listening/learning in the practice time....makes students accountable to be accomplishing something at practice. Can be used to identify weak areas. Ask questions about the event description...like how many help sheets can you use....what kind of calculator is allow...anything in the event description.
- Practice making "help sheets" and encourage students to use the help sheets when taking any quizzes or writing the "exit card".

Be sure to consider the www.soinc.org recommended websites:

- www.soinc.org The national Science Olympiad website for the last word on SO events
- [NOAA Education Resources](http://www.noaa.gov/office-education/science-olympiad) <http://www.noaa.gov/office-education/science-olympiad> More about Everyday Weather, but is useful.
- [Sample Exercise/Answers](https://www.soinc.org/sites/default/files/uploaded_files/sample_meteorologyv2.pdf) https://www.soinc.org/sites/default/files/uploaded_files/sample_meteorologyv2.pdf 2008 Meteorology Test...I like the type of questions, but I think some harder questions should be added.
- [American Meteorological Society – The Data Streme Project](http://www.ametsoc.org/amsedu/dstreme/) <http://www.ametsoc.org/amsedu/dstreme/> The American Meteorological Society Real Time Weather Portal. Great page on Weather Stations is saved for you in the Coaching Academy Resources.
- [American Meteorological Society – Education Program](https://www.ametsoc.org/ams/index.cfm/education-careers/education-program/) <https://www.ametsoc.org/ams/index.cfm/education-careers/education-program/> The educational resources of the American Meteorological Society.
- [Scioly.org Event Wiki & Test Exchange](http://scioly.org/wiki/index.php/Main_Page) http://scioly.org/wiki/index.php/Main_Page Information and test exchange that are useful, but vary in quality so should not be the only resource.
- [DataStreme Project Participants page](http://www.meteor.wisc.edu/~hopkins/ams/) <http://www.meteor.wisc.edu/~hopkins/ams/> A collection of weather websites that was maintained by University of Wisconsin, but last revisions were years ago so many are out of date.
- [How the Weather Works](http://www.weatherworks.com/#) <http://www.weatherworks.com/#> Other websites are more comprehensive
- [The Globe Program](http://www.globe.gov/about/overview) <http://www.globe.gov/about/overview> An international science and education program that provides students and the public worldwide with the opportunity to participate in data collection and the scientific process, (I don't use it.)
- [The Online Guides - Meteorology](http://ww2010.atmos.uiuc.edu/(Gh)/guides/mtr/home.rxml) [http://ww2010.atmos.uiuc.edu/\(Gh\)/guides/mtr/home.rxml](http://ww2010.atmos.uiuc.edu/(Gh)/guides/mtr/home.rxml) Extremely useful website with topics such as Air Masses and Fronts, Severe Storms, and Hurricanes.

Great Websites:

<http://www.srh.noaa.gov/jetstream/matrix.html> Brought to you by Jetstream, an Online Weather School. Includes practice quizzes. I love this website!

<http://www.srh.noaa.gov/jetstream/append/quizzes.html>. A central location for the print version of the online quizzes from Jetstream. Also includes a glossary and acronyms.

<http://www.nssl.noaa.gov/education/svrwx101/> The National Severe Storms Laboratory Severe Weather 101 website

www.spc.noaa.gov Storm prediction Center Website with good resources

www.nhc.noaa.gov The National Hurricane Center...good resource for all things hurricane!

<http://www.weather.gov/about> The website of NOAA's National Weather Service, especially good for safety.

www.theweatherprediction.com Topics by meteorologist JEFF HABY.....includes quizzes that can be used for practice. I saved the best for last! Now online...<http://www.theweatherprediction.com/habyhintsbook/> **1001 Haby Hints**

Study Resources:

- Storm Spotters training....google "weather spotter training" for schedule of free training opportunities in your area.
 - Skywarn Spotter's Field Guide and Stormspotter-diagram on Coaching Academy Resources
- NWS Weather Forecast Offices (map) <http://www.srh.noaa.gov/jetstream/nws/wfos.html>. It may be possible to visit these offices
- Audubon Guide recommended in the event description
- Meteorology CD from Science Olympiad Store www.soinc.org (Is it available at coaching academy?)
- Know the US States and their abbreviations...I know, you didn't think this would be necessary.....
State Locations and Abbreviations: <http://www.50states.com/maps/usamap.htm>
http://www.eduplace.com/ss/maps/pdf/us_nl.pdf
Online States map quiz: <http://online.seterra.com/en/vgp/3003>
Several apps are available for phones
- Tests to start you out: Basic Meteorology Test online <http://www.scioly.org/wiki/images/b/b9/MetTest2.pdf> (Answer Key available) More difficult practice test <http://www.theweatherprediction.com/wxtest/test/> (Answer Key available)

Gifts: Activities for you to use:

- Students review "Severe Thunderstorm Structure" at www.theweatherprediction.com and then take a labeling quiz in the file, "Supercell to Label with Key".
- US States Map to identify states using Official State Abbreviation: **US State Map** pdf file from this Coaching Academy
- Vocabulary Activity Instructions for **Meteorology Vocabulary Activity** and **Meteorology Vocabulary** files: Give each student paper(s) with a vocabulary word and the definition of a different vocabulary card. Each card is in this format: "That is the definition of" _____? _____ (vocabulary word that was read by a different student). "What is" _____? _____ (definition of the next vocabulary word). Then the student holding that vocabulary word reads the card they have.
- **BEST** Gift for Meteorology is in the file called "Severe Weather Topics 2017" ...ENJOY!