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| **Workshop Information:**  **GLOBE Weather: A New NGSS-Based Middle School Unit**  *Denver Museum of Nature and Science, Colorado*  *March 6th-7th, 2020* |
| **Workshop Description:**  During the workshop we will share a new, free unit about the science of weather that combines activities, data analysis, modeling, and weather measurements using GLOBE Program protocols. The curriculum helps students understand NGSS-based weather concepts such as the uneven heating of the Earth, local and global atmospheric circulation, and air mass formation and collision as they investigate weather patterns and extreme weather events that we experience. |
| **Workshop Learning Outcomes:**   * Orientation to the GLOBE Weather curriculum * Explore weather concepts with modeling, data analysis and hands-on activities * Introduction to the GLOBE program & GLOBE Atmosphere protocols |
| **UCAR Contacts:**   |  |  | | --- | --- | | **Emily Snode-Brenneman**  Program Specialist UCAR Center for Science Education  emilysb@ucar.edu | **Melissa Rummel**  Educational Designer UCAR Center for Science Education  mrummel@ucar.edu | |
| **Workshop Resources**  **GLOBE Weather website:** [**globeweathercurriculum.org**](https://scied.ucar.edu/globe-weather-curriculum)   * Full curriculum available via free download   **Web link to GLOBE Weather workshop materials:**   * [**https://scied.ucar.edu/events/globe-weather-workshops**](https://scied.ucar.edu/events/globe-weather-workshops) * Slides, workshop outline, handouts & materials used during the workshop   **UCAR Center For Science Education Learning Zone:** [**scied.ucar.edu/resources**](https://scied.ucar.edu/resources)   * Atmosphere related activities, Teaching Boxes, videos, games, and more for students and teachers.   **GLOBE Weather Educators Facebook Group:**   * Use social media to connect with educators who are using the GLOBE Weather curriculum-- ask questions, share resources, receive updates and more! From your facebook account, search for “GLOBE Weather Educators” and select “join.”   **The Inquiry Project:** [**https://inquiryproject.terc.edu/**](https://inquiryproject.terc.edu/)   * Curriculum, videos, research, and PD to support using inquiry & productive talk in the classroom * Talk Moves Checklist: [**https://inquiryproject.terc.edu/shared/pd/Goals\_and\_Moves.pdf**](https://inquiryproject.terc.edu/shared/pd/Goals_and_Moves.pdf) * Talk Science Primer; a research based introduction to productive talk: [**https://inquiryproject.terc.edu/shared/pd/TalkScience\_Primer.pdf**](https://inquiryproject.terc.edu/shared/pd/TalkScience_Primer.pdf)   **Visible Thinking:** [**http://www.visiblethinkingpz.org**](http://www.visiblethinkingpz.org/)   * Thinking routines to structure productive talk and help build a culture of talk: (<http://www.visiblethinkingpz.org/VisibleThinking_html_files/03_ThinkingRoutines/03a_ThinkingRoutines.html>) * The thinking routines are the result of Harvard School of Education research called Project Zero (<http://www.pz.harvard.edu/projects/visible-thinking>)   **Kagan Cooperative Learning:**   * The Essential 5: A starting point for using Kagan Cooperative Learning <https://www.t2tuk.co.uk/downloads/The%20Essential%205.pdf>   **Liberating Structures:**   * <http://www.liberatingstructures.com/1-1-2-4-all/>   **GLOBE Atmosphere Protocols:** [**https://www.globe.gov/do-globe/globe-teachers-guide/atmosphere**](https://www.globe.gov/do-globe/globe-teachers-guide/atmosphere)   * Students and scientists investigate the atmosphere through the collection of data using measurement protocols. * NASA CloudSat satellite resources for clouds: · <https://www.globe.gov/web/cloudsat/overview/cloudsat-resources>   **GLOBE Program:** [**globe.gov**](https://www.globe.gov/)   * GLOBE Observers (Citizen Scientists)   + A free app-based citizen scientist initiative collecting data about clouds, mosquito habitats and larvae, and land cover in 120+ countries. Visit the [Get Started](https://www.globe.gov/get-started/become-a-globe-teacher/overview-and-benefits) tab on the GLOBE website to learn more. * GLOBE Teachers/Educators * Connect to an international network of students, teachers and scientists while learning more about our shared environment. For a school to fully participate in The GLOBE Program, at least one teacher must be trained in GLOBE science measurement protocols and education activities. Visit the [Get Started](https://www.globe.gov/get-started/become-a-globe-teacher/overview-and-benefits) tab on the GLOBE website to learn more.   **Forestry Suppliers:** [**https://www.forestry-suppliers.com/Search.php?stext=GLOBE**](https://www.forestry-suppliers.com/Search.php?stext=GLOBE)   * Official GLOBE supplier for classroom weather instruments   **Cloudy with a chancy of joy (Gavin Pretor-Pinney), 10 minute TED talk:**  [**https://www.youtube.com/watch?v=lhP52caGW6s**](https://www.youtube.com/watch?v=lhP52caGW6s) |