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| **Workshop Information:**  **GLOBE Weather: A New NGSS-Based Middle School Unit***NASA Langley Research Center**August 19-21, 2019* |
| **Workshop Description:**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 GLOBE program & certification in GLOBE Atmosphere protocols
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| **UCAR Contacts:**

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| **Workshop Resources****GLOBE Weather website:** [**globeweathercurriculum.org**](https://scied.ucar.edu/globe-weather-curriculum)* Full curriculum available via free download

**Web link to NASA Langley workshop materials:*** [**https://scied.ucar.edu/events/globe-weather-workshops**](https://scied.ucar.edu/events/globe-weather-workshops)

**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

**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 in your classroom: (<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.

**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
* Through The GLOBE Program, teachers can connect students 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. Training is key to gaining knowledge and skills to implement GLOBE science protocols and activities in a school setting. 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
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