TAKING DATA TO THE NEXT LEVEL

Jeffrey R. Bouwman
GLOBE ENSO Field Campaign
Tuesday, October 18, 2016
8:00 p.m. (EST)
Jeffrey R. Bouwman
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Shumate Middle School
Gibraltar School District

Adjunct Professor
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<table>
<thead>
<tr>
<th>Site Name</th>
<th>Investigation Area</th>
<th>Number of Reports</th>
<th>Date Activated</th>
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<tbody>
<tr>
<td>WeatherSTEM (Temperature)</td>
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<td>3774</td>
<td>09/16/2016</td>
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<tr>
<td>Mrs. Hoover - GLOBE Rain Gauge (Precipitation)</td>
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<td>214</td>
<td>02/09/2016</td>
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<tr>
<td>2016 - 2017 - 6th Hour - 300 Hallway Sidewalk</td>
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<td>102</td>
<td>09/13/2016</td>
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<tr>
<td>2016 - 2017 - 5th Hour - Science Lab</td>
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<td>130</td>
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<tr>
<td>2016 - 2017 - 3rd Hour - Locust Tree</td>
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<td>130</td>
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<td>2016 - 2017 - 2nd Hour - The Pond</td>
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<td>128</td>
<td>09/12/2016</td>
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Get an Organized Work Space
**Soil Moisture Data**

**SMAP - Soil Moisture Active Passive**

1. Select the correct data site from the Bookmarks.
2. Enter the correct date and local (military) time.
3. Dry Method - Oven 75 95 Degrees C.
4. Calculate Dry Time (24 hours/day).
5. Enter the correct wet and dry sample weights (grams) along with empty can weight.
6. Submit when all data is entered.
7. Put empty used SMAP cans away.
8. Clean off tools as needed.
9. Make sure oven door is shut. The oven setting is 4.

**Soil Temperature**

1. Select the correct data site from the Bookmarks.
2. Click Get Current UTC Time.
3. Thermometer Type - Other Soil or Air.
4. Convert your Fahrenheit measurements to Celsius. * Use the Internet to convert.
5. Enter data and submit.

**Surface Temperature**

1. Select the correct data site from the Bookmarks.
2. Click Get Current UTC Time.
3. Select the site’s condition (wet, dry, snow).
4. Enter surface temperature data collected.
5. Enter cloud and contrail data.
6. Submit when all data is entered.

**Oven Placement**
Have Your Tools Ready to Go
Get Creative!

Jeff Bouwman @jeffbouwman · Oct 6
Ever see a solar noon @GLOBEProgram rain gauge & an early morning @CoCoRaHS rain gauge in the same spot?! Now you have! #GettingScienceDone
Train the Trainers – Student Leaders
#DataSMASH – Surround Your Students with Data

- **12th Hour**
  - Soil Moisture: 173.5 grams
  - Surface Temp: 23.6 °C
  - Soil Temp:
    - 5 cm: 20.0 °C
    - 10 cm: 17.7 °C
  - Clouds: None

- **13th Hour**
  - Soil Moisture: 26.6 grams
  - Surface Temp: 24.7 °C
  - Soil Temp:
    - 5 cm: 20 °C
    - 10 cm: 16 °C
  - Clouds: Altocumulus Cumulus

- **OCTOBER 2016**
  - GLOBE October

- **13th Hour**
  - Soil Moisture: 26.6 grams
  - Surface Temp: 24.7 °C
  - Soil Temp:
    - 5 cm: 70 °C
    - 10 cm: 62 °C
  - Clouds: Altocumulus Cumulus
#DataSMASH – Surround Your Students with Data
**#DataSMASH – Surround Your Students with Data**

**Stations:**

| MI-WY-116 | Gibraltar 0.8 SW | Lat: 42.085565 | Lon: -83.211045 |

* indicates Multi-Day Accumulation Report

| Station | MI-WY-116 |

<table>
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<td><strong>Totals</strong></td>
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GLOBE Goals

Graph Data from the Data Board
Students have Chromebooks...
Use Google Spreadsheet! Discuss!

#DataSMASH
Continue combining GLOBE, CoCoRaHS, & WeatherSTEM data.

WeatherSTEM Protocol
Help launch a WeatherSTEM protocol.

Most Important
Create GLOBE Projects
with our students!
Any Questions?