GLOBE mosquito implementation

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Agenda

- 8:00-8:30 Life cycle activity (E)
- 8:30-9:00 Mosquito protocol (M)
- 9:00-10:00 Field trip (E, K, M)
- 10:00-10:15 STEM activity (K)
- 10:15-10:30 Mosquito data entry (M)
- 10:30-11:00 Practice mosquito data entry (K)
- 11:00-11:30 Formulating research question & Data interpretation (E, K, M)
- **11:30-11:45 Implement at your school (E, K, M)**

How should we implement mosquito protocol?

- Add other GLOBE Protocols to this
- Find factors affecting climate changes
- Find mosquito related diseases in your area
- Formulate research questions that relevant to your school

Link with GLOBE protocols

- ATM: rainfall, rain pH (GPM), max/min/average air temp, RH, wind speed
- Hydrology: water temp, turbidity, water pH, macro-invertebrate (mosquito predator)
- Diseases: dengue fever, malaria, west nile, zika fever, yellow fever

Student research questions

- Spatial and temporal variations of mosquito larvae.
- Mosquito species and abundance in your area
- How do rainfall, rain pH, water temp, air temp, RH, wind speed correlate with mosquito larvae and dengue fever?
- How do geographical areas (e.g. coastal, mangrove, mountainous, rice paddy area) affect species and abundance of mosquito larvae?

Mosquitoes and climate changes

- Temp increases, rainfall pattern changes, summers become longer- mosquitoes can remain active for longer seasons and in wider areas-great increasing risk for people living there.
- Global scale: increase in heat, precipitation, humidity allow tropical/subtropical mosquitoes to move to new places.+ couple with increase in international travel->increase the risk for becoming home to new diseases.

Mosquito and Climate changes

- If students around the world collect mosquito, ATM and hydrology data, we could see
  - How mosquito distribution changes (moving up in term of latitude and elevation)
  - How mosquito larva species and abundance changes along with some weather data changes in some areas.
  - By doing this, it will raise some awareness on where and when mosquitoes are abundance. Students could help their community control an outbreak of the mosquito borne diseases.

How are you going to do this at your school?

- Write down your research questions
- Come up with experimental design
  - How many houses will you do?
  - How often do you plan to sample e.g. once a month, every two months
  - What other GLOBE protocols you will use?
  - How to analyze your data?