

# GLOBE IN THE CLASSROOM

**GLOBE Annual Meeting – July 2016**

**Presented by:**

Charles Mwangi  
GLOBE Program (Kenya)

**In consultation with:**

Teacher Stephen Kamau (GLOBE  
Teacher)





# ST. SCHOLASTICA PRIMARY SCHOOL

- ❑ St. Scholastica Catholic Primary school is located in Nairobi, Kenya.
- ❑ Offers teaching from pre-school up to primary level (Grade 1-8) based on the Kenya education system.
- ❑ Joined GLOBE program in 2014 and is currently involved in a number of initiatives.
- ❑ Has 1 GLOBE-trained teacher and 2 supporting teachers.





# GLOBE ACTIVITIES

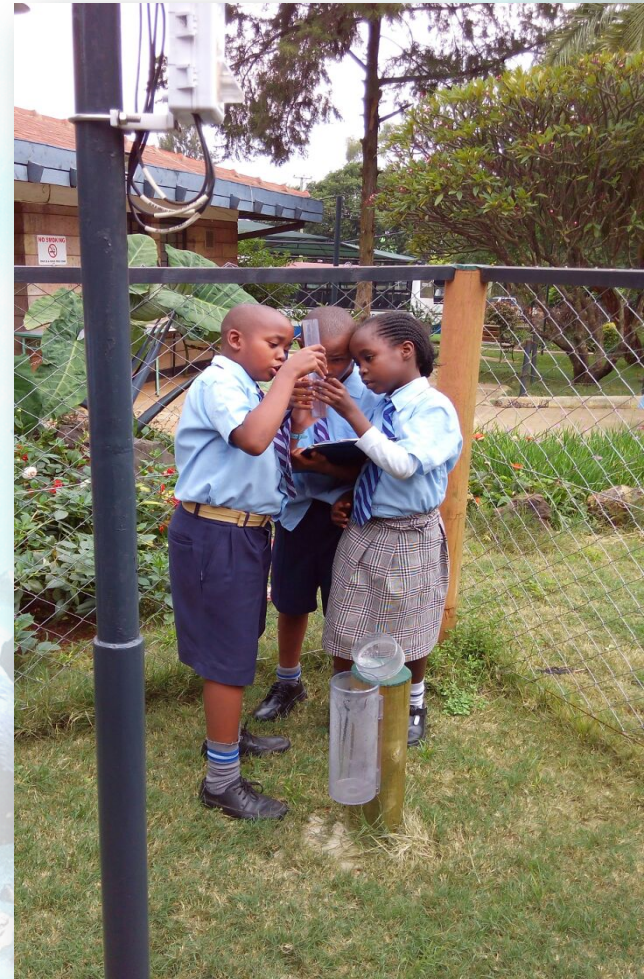
As a GLOBE School, we are participating in a number of initiatives which includes:

- ❑ Cloud and Precipitation (rain) data collection
- ❑ Monitoring water quality
- ❑ Monitoring atmospheric conditions (Automatic Weather Station)
- ❑ Monitoring air quality (recently installed by UNEP)
- ❑ Water rocket challenge





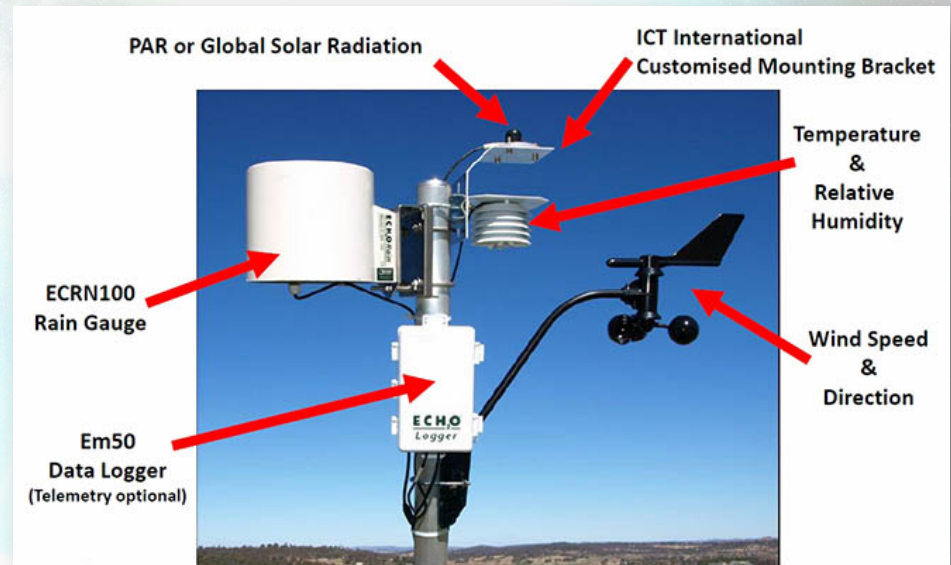
# CLOUD & PRECIPITATION PROTOCOL





# GLOBE-TAHMO WEATHER STATION

- ❑ Data from AWS is can be visualized from [www.school2school.net](http://www.school2school.net) and downloaded by teacher with log-in access.
- ❑ Teachers trained on AWS parts and data collected by AWS and Atmosphere protocol.
- ❑ Decagon/TAHMO/GLOBE team visited school to explain to pupils.





# WATER QUALITY

Under GLOBE Hydrology protocol we have previously monitored the following parameters on River Mathare:

- ❑ Water temperature using thermometer
- ❑ Water pH using pH meter
- ❑ Conductivity using conductivity meter





# WATER ROCKET

We had a water rocket event to introduce the pupils to satellite technology:

- ❑ Pupils made water rockets using empty 2lt plastic soda bottles and other cheap materials.
- ❑ Using pressurized air (using bicycle pump) and water, they launched the water rockets

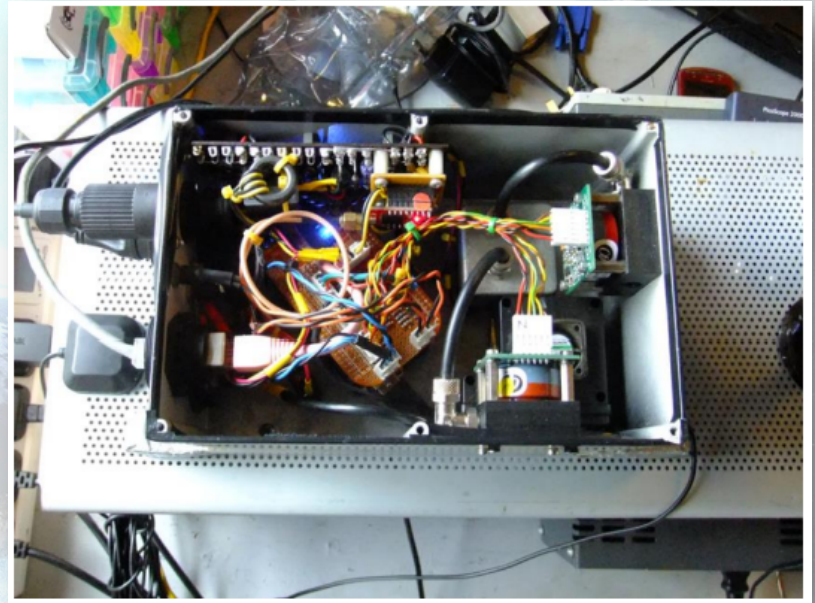




# UNEP AIR QUALITY

Our school was selected to host the UNEP Air Quality Kit:

- ❑ The kit monitors the air quality (pollution) around our school which is near a major highway
- ❑ Data collected include; PM2.5, PM10 (dust), Nitrogen Dioxide, Sulphur Dioxide.





# GLOBE RESEARCH

## **Research Question: Relationship between changes in atmospheric conditions and flu occurrence**

- ❑ GLOBE Science team is undertaking a study to explore whether changes in temperature, dust particles, precipitation, relative humidity have an effect on the number of influenza cases reported at Uzima Dispensary near the school.
- ❑ We will be using atmospheric data collected by the TAHMO Automatic Weather Station and recently installed UNEP Air Quality kit located in our school.



# UNEP PRESENTATION

Our school was invited to make presentation at the United Nations Environment Assembly of UNEP Science Policy Forum on Role of Citizen Science data:

- ❑ The presentation covered GLOBE program, Cloud protocol, current initiatives and our on-going research.
- ❑ We showcased how GLOBE schools collect data that can be used for scientific research.









## CONCLUSION

- ❑ GLOBE protocols offers a hands-on approach to teaching pupils science concepts which are covered in the syllabus.
- ❑ GLOBE Protocols offer the pupils a platform to monitor their environment.
- ❑ GLOBE program linkage has enabled the school to access equipment that would otherwise be too expensive.
- ❑ GLOBE program has facilitated mentorship programs, much recently with Dr. Erika Podest, who shared a lot about Satellite missions and working with NASA which was inspirational to the pupils.
- ❑ All these opportunities has enhance the learning experience of the pupils and encourages them to be inquisitive.



# THANK YOU FOR YOUR ATTENTION

Schools with the Highest Contribution of Measurements for Data Entry Challenge Week 2016 Apr 18-24			
AFRICA			
		Measurements	Atmosphere
St. Scholastica Catholic School	Kenya	570	
Conville Primary School	South Africa	181	
Lycee Thilmakha	Senegal	102	
			Biosphere
Measurement contributions were not made			
			Hydrosphere
Measurement contributions were not made			
			Pedosphere
Measurement contributions were not made			

- ❑ Apologies I could not be there in person due to unavoidable circumstances
  - ❑ Contact: Charles Mwangi
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