

Hydrology protocols

Sites: Hammonasset, Cove River and Campus

1. The total number of respondents at the three sites was: 24 for the Campus site, 34 for the Cover River site and 41 for the Hammonasset site (total: 97 responses) The Hydrology protocols were conducted at all three sites.

Question	Answers
1. How many times have you conducted this protocol before today?	The respondents who stated that they had conducted the protocol for the first time were: 8 for Hammonasset, 6 for Cover River and 2 for the Campus site (total: 16). The respondents who stated they had conducted the protocol one or two times were: 6 for Hammonasset, 5 for the Campus site and 3 for the Cover River site (total: 14) Finally, the respondents who said that had conducted the protocol more than 3 times were: 24 for Hammonasset, 4 for the Campus site and 4 for the Cove River site (total: 32).
2. Did you do the e-training module for this protocol before this workshop?	The numbers of respondents who indicated that they completed the hydrology e-training module were: 11 for Hammonasset, 7 for the Campus site and 4 for the Cove River site (total:22) The numbers of respondents who responded negatively were 20, 6 and 9 respectively (total: 35).
3. Circle the protocol that you felt was more engaging to you. Describe why you felt it was engaging.	The Hydrology protocols were not selected as most favorites at any of the sites. However, they were chosen as the second most favorite thematic area for the participants at the Hammonasset site and at the Campus site.
4. Were you able to successfully use the instrument?	The majority of the participants stated they were able to use the instruments (23). Only five said they were not for Hammonasset, one for Campus and one for the Cover River site.

5. Why did you find the specific protocol engaging?

Describing why the participants found the specific protocol engaging, the respondents provided the following comments:

Hydrology: i) has lots of different activities. ii) was the protocol that was explained and delivered the best. iii). I have a passion for chemistry. iv) The probes were very interesting to work with. v) the specific protocol has the right content for my students' grade level. vi) I found out about turbidity, the transparency tube, I never used this method before. vii) We used the observer app. It was fun to collect and analyze the data.

6. What did you learn?

Explaining what it was that they learned while conducting the *Hydrology* protocol they preferred, the participants stated:

Hydrology sampling and data collection. ii) Probes are not always reliable. iii) Instruments and terminology iv) How the water quality impacts life, v) the specific protocol helps the trainee to learn a lot about the instrumentation and the calibration and how it is related to the results.

General comments (for all protocols): i) I learned about interesting activities that the students will enjoy doing. ii) I learned that every environment is part of a system. iii). I learned about science, education, life.

7. Please describe the challenges associated with the protocols you conducted today.

Challenges that the respondents had with the Hydrology protocol were: i) Problems with instrument batteries. ii) Were missing some of the hydrology probes. iii)The data entry forms in hydrology did not match our probe ware. iv)The data entry forms for hydrology made it confusing. v) Hydrology was not well organized, not much background was given. vi) It was too hot to stay out for such a long time without any shade. vii) We could not see the screens. vii) Vernier ware was hard to use outside. viii) Probes did not work properly ix) The cost for the automated probes is quite high and therefore these are unattainable for many participants. Similarly, the probes did not seem to be working appropriately so perhaps in the future they should not be used exclusively. x) Insufficient time to conduct the hydrology protocol. xi) Too much time was spent on the measurements, not enough time spent on calibration.

8. What suggestions do you have to improve the protocols you conducted today?

i) Reference materials need more information as trainers sometimes have information that should be available to all. ii) The data entry should match the available data source. iii) Use chemical test kits or make them available as a backup during training iv) Quick review of

e- training points and do the protocol from GLOBE App -not probes. v) Provide more time to do the protocols and to allow the groups to rotate between protocols.

General comments: i) As a trainer I wish I could have participated in other protocols that I do not generally get a chance to do. ii) Explain more on how the app works. iii) provide the data collection sheets to the trainers before taking the measurements. Follow the trainers as they do all the steps iv) These protocols are very important for us. We need more training sessions. v) Spend more time discussing and providing feedback on protocols. Give more details in what exactly will be studied in the field. vi) Make available more equipment in the field and share more knowledge in the field. vii) Have an umbrella so that there can be shade to read the screens. viii) Include info on how to calibrate instruments. ix). Involve more country coordinators in the trainings. x) Organize people in small groups for measurements. xi) People should be given tablets to enter their data at the site. xii) Use data sheets along with the data entry app for non-English speakers. xiii) The training volunteers should verify the probes beforehand. xiv) Provide a dress code for the Saudi women so that they do not drag their dress coats into the mud (helpful, respectful).