Get CERIAs Forum Instructions

The following is the table found in student journals after a research project. I learned the QCEE format for summarizing research results from a Port Townsend Marine Center Educator Workshop, used it for years, and am always left impressed by the higher-order thinking it inspires.

CERIAs Forum Notes (in student journal)

Claim • State what you think is the answer to your research question, according to your data.	**E**vidence • What does the graph show? • Do the math, what are the numerical differences between the two responding/output variables? Example: How much more or less plankton near the surface than at 5 m?
Reasoning • **E**xplanation ○ why you think you got the results that you did, and possible errors that may have changed your results	**Implications** • What does this information mean for the wildlife, ecosystem, your community, the wider world?
Applications • How should this new knowledge be applied to change human behavior, change public policy, and/or improve the ecosystem? • What are your science and/or traditional knowledge-based recommendations?	

Get CERIAs Forum How-To

I learned about the following discussion format from a video of a poetry discussion with 1st graders at a PLC meeting, then combined it with the CERIAs format for writing conclusions to come up with a platform for students to argue using evidence, and feel pretty, darn professional doing so. A video will come soon, but until then, follow these instructions:

1. Have students fill in all components of the CERIAs chart.

2. Tell students that scientists like to argue, I mean *discuss** their thoughts on research results, but must behave in a very professional way while doing so to maintain the respect of the

scientific community, the public, and the legislators who may use their research to make important policy decisions. Have students help decide what professional behavior looks like by giving examples of unprofessional behaviors (slouching in a chair, chewing gum, using slang, etc.). Let them know they get to argue, I mean *discuss*, their research in a Get CERIAs Forum and that there is certain etiquette they'll need.

3. Tell them this is a student-scientist-led forum. You, the teacher, will not be a part of the conversation or even part of the circle. Students should address one another, not you, when they speak. It is their research and they are in charge. You will be outside the Forum, assigning points to each student-scientist who contributes to the forum. Students do not need to raise hands to speak, but rather use polite etiquette to judge a good time to speak.

4. Let them know the Forum will open by one student stating the question tested, making his/her claim (answer to the question), supporting it with evidence, etc., following the flow of his/her CERIAs notes, which all will bring to the Forum.

Another student may add to that claim and explanation ***or*** dispute it by saying, very professionally, "I beg to differ, but as you can see in the graph….," then support their new claim with evidence.

5. Invite students to move desks aside and place chairs into one, large CERIAs Forum Circle, bring journals, opened to their CERIAs notes, and have a seat. Project the class' graph/s and data table for all to see and reference along the way.

6. Give students the go-ahead to begin and be ready to be impressed by some professional argumentation (I mean *discussion*). Being in charge really 'ups their game!' Assign points or record other student data as you see fit.

*Students get a kick out of playing up/acting like you meant to say discuss, but they take away that they are being given license to *argue*! When it comes to arguing, scientists rival lawyers in court, but usually with better evidence to support their claims 😊.