

AK MARINE SCIENCE SYMPOSIUM 2024—A Resource for Educators 2 credits
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Following are the expectations for documenting full participation in the education experience provided by the Alaska Marine Science Symposium and ASTA. Thanks to AMSS for the free registration for educators!

With the shifts being made in how science education is carried out in public schools, this is such a great opportunity to observe and experience the personal and professional assets that move science forward all over the world. Take note and enjoy a moment to appreciate those same assets in yourself and in your students.

Each day you attend the symposium, there will be a dated page for you to document your hours for that day. Because there are breaks, your name and hours may appear on more than one page for that date. Instructor will tally your hours and you will need to verify attendance at 30 hours, including any keynote speakers, poster sessions, workshops, special events as long as there is STEM (science, technology, engineering, math) content.

REFLECTIONS

From your 30 hours of attendance, choose twelve poster sessions and two keynotes to reflect on. Your reflection should be written in a narrative style of your choosing, appropriate to a secondary student's reading level. Each reflection should be 1-2 paragraphs and incorporate information or a researcher's experience that was

- surprising to you
- connected to something you have studied or want to study more
- of paramount importance to the economic or ecological well-being of the world's oceans
- linked to discussions you have had with students
- innovative in its research methods or technology
- particularly impactful quote by the researcher presenting or someone else
- something else noteworthy

Depending on the style of writing you use, you may want to provide your own reflections as reading practice for your students who need more skill in using informational text. One resource that has some useful ways for boosting those skills is this one. This is especially helpful if teaching reading at the grade level you teach was not in your pre-service experience.

<https://www.heinemann.com/products/e04693.aspx>

(This instructor does not benefit financially in any way from this suggestion.)

For each reflection, include the researcher(s) name(s), their organizational affiliation (university, conservation group, agency...), and the date and time of their presentation.

Bonus: If you are comfortable and motivated to do so, introduce yourself to at least one of the presenters and converse with them about their current research work or their presentation or their background. If you can glean some personally engaging insights from the presenter, you will have something to share with your students that may inspire them to pursue a career in science. If you do engage with a presenter, write a reflection about that experience.

All the work above will be considered 6 hours of the 60 follow-up hours.

INTEGRATING STANDARDS

As most educators may be aware now, one of the key elements in the Science Standards for Alaska which follow the Framework for K-12 Science Education, is the idea of “three dimensional teaching and learning.” This refers to Science and Engineering Practices, Cross-Cutting Concepts, and Disciplinary Core Ideas. If this is new to you or you have not taken advantage yet of the resources on the Department of Education and Early Development web site, check these out.

<https://education.alaska.gov/standards/science>

Another key to making science education more meaningful, engaging, and equitable is within this document.

<https://ngss.nsta.org/Documents/New%20Vision%20for%20Science%20Education.pdf>

Helping to promote STEAM learning through other content and other skills through STEAM learning:

<https://static.nsta.org/ngss/PracticesVennDiagram.pdf>

IN THE CLASSROOM (or in the field)

Next, choose a marine science phenomenon to explore with students (see Teacher Primer in Educator Toolbox on DEED page mentioned above for a description of “phenomenon” in a science education context.) The phenomenon can be something you may have learned about at the Symposium or not.

Look over all the Practices, Concepts, and DCI’s for your grade level of interest and choose at least one of each to apply to your lesson planning and write them out.

Create and outline with some detail three one-day lessons, a multi-day lesson, OR frame a 2-3 week unit to explore the phenomenon. Make these of a format that can really work for your setting and your students.

Choose three hours of your lesson plan to implement with students. Describe what went well and what you would change. Share student reactions, conversations, innovations, connections, and learning of disciplinary core ideas. Remember to incorporate technology, engineering, and math where you can.

List all resources you review or incorporate in preparing and carrying out your lessons.

This preparation, classroom experience, and documentation will comprise the remainder of the 60-hour follow-up work for the two credits. I would expect all the writing (plans, reporting, resources) to take 8-12 pages.

Note: If your work as an educator takes place in a different setting than a K-12 or college classroom, I welcome your proposal for creating a comparable experience for your audiences. Please describe your idea to me as soon as possible so we can agree on the expectations.