Dear Teachers,

As part of our effort to ensure quality STEM learning experiences, we invite you to participate in two new survey options for our Ocean Acidification (OA) module. You can complete both or any part of each.

1. **Retrospective Pre/Post Survey for students** - This is an 8-minute survey that students will complete at the end of the module.
   a. **Survey purpose:** This will provide insight into how students’ ideas about science, technology, engineering, math, and careers may have changed while completing the module. The post-survey helps us understand how the module helps students build on STEM pathways across their lives.

2. **OA Mini-Survey Series for students and teachers** - A mini-survey is a short survey (1-3 minutes) that students and teachers will use several times over the course of the module. The questions are identical each time, so the same link can be used each time.
   a. **Survey purpose:** The mini-survey helps us better understand student engagement over time, in relation to specific Next Generation Science Standards, for the purposes of program improvement. See below for more information.

   **TEACHER MINI-SURVEY** (link address: [https://www.surveymonkey.com/r/OA_TeacherSurvey](https://www.surveymonkey.com/r/OA_TeacherSurvey))

Please provide **2-4 minutes for students** to complete the mini-survey while in class. It should take most students one minute or so, especially after the first survey or two (because the questions remain the same).

In the survey, the students will be prompted to think of the “last two lessons” when answering questions. In some cases, they will have completed two lessons (such as Lesson 1 - Critical and Systems Evaluation of News Articles and Lesson 2 - Exploring CO₂). In other cases, they will have only completed one lesson which has extended across multiple days (such as with Lesson 3, 4, 5 and 6). Prior to having students complete each survey timepoint, please briefly remind them of the lessons they should have in mind when answering the survey questions. We have included examples of words you can use to remind them at each timepoint in the table below.

Please **complete the teacher version** while students are taking the mini-survey, or at the end of the day. Please take it on the same day the students take theirs.

These surveys are completely voluntary. If completed, it will provide us with valuable feedback. Your name will not be associated with your answers and all responses will be reported in aggregate. Your responses will not affect your standing with ISB or your grades.

(TIMELINE on next page)
### MINI-SURVEY TIMELINE

| Survey timepoint | At the end of | Example prompt for students: Take this survey while thinking of the lessons we completed on [days] that allowed you to:  
|---|---|---|
| 1 | Lesson 2 | ● evaluate and map news articles and  
| 2 | Lesson 3 | ● work in the lab to make and detect carbon dioxide.  
| 3 | Lesson 4 | ● watch a video and PowerPoint on OA and  
| 4 | Lesson 5 | ● evaluate whether OA is something that requires a systems approach  
| 5 | Lesson 5 | ● plan with your interest group to  
| 6 | Lesson 6 | ● develop your experimental question, hypothesis and procedure  

### RETROSPECTIVE PRE/POST SURVEY TIMELINE

<table>
<thead>
<tr>
<th>Survey timepoint</th>
<th>At the end of</th>
<th>Example prompt for students: In this survey, you are asked to first think back to before your work on the module started--it may have been several weeks ago--and answer the question the way you would have BEFORE completing these lessons. Then you’re asked to give your thoughts now, TODAY.</th>
</tr>
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<tbody>
<tr>
<td>6</td>
<td>the entire module regardless of which lessons you completed.</td>
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