We appreciate EdReports initial review of our recently released *Bring Science Alive!* program. We're excited to work with EdReports to improve the accuracy of the report and use their feedback as we continually improve our curricular materials.

Our response below outlines a few of our broader issues with the report and provides a couple of concrete examples as counterevidence. We are happy to provide districts with a much more detailed list explaining items that were overlooked or not accepted by EdReports. We encourage science teachers and specialists to review the evidence side-by-side and draw their own conclusions.

There are numerous locations where we believe that reviewers overlooked or disregarded evidence from the program, many of which were shared directly with reviewers. Below are two specific examples.

- The report claims that "the materials do not integrate a CCC" in Grade 8, Lesson 4: Types of Waves (Indicator 1a.i).

  But CCC-EM-M2 *(Within a natural or designed system, the transfer of energy drives the motion and/or cycling of matter)* and CCC-EM-M4 *(The transfer of energy can be tracked as energy flows through a designed or natural system)* are clearly incorporated in all parts of this lesson.

  In Investigation 1, students come up with a definition of waves that incorporates the flow of energy and matter. For example: "A wave is a phenomenon that transfers energy from place to place without transferring matter." The definition is then used in Investigation 2 as the basis of their claims. The only way students can make their arguments (SEP-ARG-M3) about waves (DCI-PS4.AM1) is by understanding the flow of energy and matter in each phenomenon and how this determines whether something is a wave.

  In the Lesson Guide, Slide 22 explicitly reminds students to use their definition of waves, which includes the transfer of energy and matter (CCC-EM-M2), in their arguments. And a Lesson Support button reminds teachers that students can incorporate their definitions into their arguments. Additionally, every hint button on Slides 23 through 28 asks the students to reflect on the cycling of energy and matter through the system to determine if each example is or is not a wave. Furthermore, the sample answer given for each example incorporates how the flow of energy and matter applies to the example and how the CCC helps students determine whether the phenomenon is a wave.

- The report claims that Grade 6, Segment 3, Performance Assessment: Conserving Coral Reefs Using Genetics "does not assess one targeted performance expectation (PE-MS-L3-1)" (Indicator 1a.i).

We shared with EdReports that this Performance Assessment assesses the unit's targeted performance expectations of PE-MS-LS1-5 and PE-MS-LS3-2, but that it was never intended to assess PE-MS-LS3-1 because that standard is assessed in the following unit. However, this inaccurate example, and many others like it, were still included in the report.

Unfortunately, there are also places where reviewers fundamentally misunderstood our program structure.

- In regards to Indicator 1b, TCI materials include many types of formative assessments that can be used to gather evidence of students' progress toward mastering three-dimensional learning objectives. In our "Formative Assessments" info bar, we provide very clear guidance on how teachers should use these formative assessment tasks to support instruction. In particular, we explain how to use Lesson Guides and Wrap Ups, Interactive Student Notebook investigation and reading prompts, Interactive Tutorials online, Vocabulary Cards, Lesson Games, and Lesson Assessments to track progress. For both Lesson Games and Lesson Assessments, quantitative results are provided on both an individual student level and a whole-class level. Obviously, teachers are able to use the data to adjust instruction and review questions that were missed. We believe that teachers are professionals so these strategies are not meant to be lock-step as teachers should be able to adjust instruction based on the needs of their particular classes and students.

  For example, for Grade 6, Lesson 21: Proteins, Genes, and Chromosomes, the report claims that "The notebook prompts provide opportunities for students to track and record their learning, but no teacher support or guidance is given to support the instructional process." However, the Lesson Guide provides specific suggestions about how to support the instructional process in the following locations:
  - Slide 8 - Provides an image and questions related to a previous lesson where students learned about DNA (Lesson 5: Parts of Cells). The questions for students, along with the suggested answers and the Lesson Support button, help teachers formatively assess prior knowledge from earlier in the year.
  - Slide 12 - Includes a formative assessment task where students come up with an analogy that shows they understand the structure and function of DNA, genes, and chromosomes. If students are struggling with the DCI or CCC concepts, it is suggested that students read Sections 3-5 in the Student Text before continuing with the investigation.
  - Slide 23 - A formative assessment is provided in the Interactive Student Notebook prompts. If students struggle with the SEP, teachers can provide the

Developing and Using Models toolkit that is suggested in the SEP Toolkits button.

- Slide 24 - Gives support for the instructional process by providing options based on how well students perform on the three-dimensional task. The Lesson Support button explicitly says "If students are easily able to apply their understanding of the 3-part model to this new cause-and-effect situation, skip the next slide and prompt. If students are struggling, do this slide together as a class and then allow students to practice on their own or with a partner on the next slide."
- Slides 26 and 43 - As with all Wrap Up slides, these provide three-dimensional questions teachers have an option of using as part of a full-class discourse or to formatively assess individual students.
- Similarly, in Investigation 2, Slides 31, 33, 39, 42, and 43 can be used to adjust instruction based on students' formative task results and answers.

- In regards to Indicator 1i, the *Bring Science Alive!* program consistently embeds phenomena to drive three-dimensional learning across multiple lessons. To build our units, we used well-established, "backwards-design" principles. Our developers identified the anchoring phenomenon—that is to be explained by the end of the unit—and the unit PEs—that are to be assessed in the unit's Performance Assessment. Both the anchoring phenomenon and the Performance Assessment are introduced to students *at the beginning* of the unit as the reason for learning. Teachers hand out the Performance Assessment so students get excited about the task and the unit phenomenon, thus motivating the learning throughout the unit.

  During the lessons, students continually add to their three-dimensional knowledge about the anchoring phenomenon so that ultimately they can explain it and meet the PEs in the Performance Assessment. Repeatedly visiting a phenomenon after gaining new information is precisely what allows for a deeper understanding. Learning is about making connections between what you know and new information, and the web of knowledge that is formed with every new connection is what allows for depth of understanding. Our Connecting to Phenomena buttons explicitly prompt students *throughout the lessons* to think about how they would change what they "know" based on what they have learned and by having them revisit their phenomenon model and adjust it based on their new three-dimensional experiences and information.

Again, we are very thankful for this opportunity to share our materials. We look forward to working with EdReports, and we are excited about continually improving our NGSS program that is already successfully in use around the nation.