Students who are ready for a challenge

When it comes to advanced and gifted learners, most curricula merely add more work, assign additional topics, or skip content or grade levels altogether. Amplify Science California appreciates the strengths of these students and understands that their wants and needs are unique. As middle schoolers, what they want is to belong to their classroom community, not be set apart as a stranger or punished with more to do. As a result, what they need are opportunities to dive more deeply into the same topics that the rest of their peers are tackling.

How does the program directly support advanced learners?

Adding more depth and complexity to lessons takes time and energy—more than most middle school teachers can afford to invest. But limited planning time shouldn't mean that advanced learners get short shrift. Embedded within our program are lesson-specific strategies for engaging and challenging students who are ready for more. Some examples of these strategies include, but are not limited to:

- **Fewer scaffolds:** Teachers are encouraged to offer students less modeling and support as they complete various tasks within the modeling tools and digital simulations, such as the Reasoning Tool tables.

- **More challenging Writing Prompts:** In addition to providing more challenging Writing Prompts, students can also incorporate more evidence from the modeling tools, Sims, and articles that they've read within their writing. For example: "Examine your modeling tool diagrams. What is the main difference between what would have happened if the lake froze versus what would have happened if the lake evaporated? What evidence would you need to have in order to know which most likely happened?"

- **Opportunities to ask deeper questions and make broader connections:** Active Reading is a very sophisticated way to read, and many advanced learners who haven't used this practice before are surprised and pleased to see how much more they get out of reading when they take the time to slow down and interact with the text in this way. To practice this, students can record the three most important things they learned from the article after reading, or record ideas and questions they have that weren't addressed in the article.

- **Independent research opportunities:** Students are encouraged to conduct independent online research to find other instances of the unit's phenomenon not covered in the article set. For an additional challenge, students can share their research with the class.

- **Creating multiple models:** When using the modeling tool, students can create additional models of the unit's phenomenon. For example, in the Phase Change unit, students are encouraged to create different weird water events from the article.

- **Testing additional conditions:** Students can run Sim tests for additional variables and then compare and synthesize data across all conditions.

- **Creating additional evidence cards:** Argumentation activities throughout the program require all students to explain their own thinking in a clear manner to another person—something that is challenging but enjoyable to most students. To increase the level of rigor for advanced learners, students can create additional evidence cards based on the unit articles—two that are relevant to the reading and two that are not. These cards can be used to support or refute the unit's existing evidence cards, and can also be given to another Challenge student or pair of students to sort.

- **Responsibility for summarizing discussion:** It is important that all students are supported in engaging in the whole-class discussion at the end of the lesson. In order to ensure that more confident learners don't dominate the discussion, teachers are encouraged to assign these students the role of discussant or synthesizer, summarizing the discussion at the end. Rather than participating the entire time, these students are responsible for listening, taking notes, and then sharing a summary of the points that were made. Preparing this summary not only provides challenges for these students, it also benefits the class by providing a review of the discussion.

- **Creating diagrams or visual representations:** Students are encouraged to create diagrams or visual representations to demonstrate what they learned from the reading and/or to strengthen their written responses. Students have the option to use the modeling tool to create these diagrams, or to draw them on paper.

- **Changing group assignments:** The Purple Group activities are designed to provide additional challenge for students who have met or surpassed Level 3 of the Progress Build. These activities extend beyond the content goals of the unit. If student partners in either the Blue Group or Green Group seem to be finding it easy to complete the modeling activities for their assigned group, you may want to swap out the activities they are working on for a more challenging set. For students in the Green Group, you could have them try the Blue Group activities. For students in the Blue Group, you could have them try the Purple Group activities.