**Acceleration Process Document:**

**Accelerating Learning when Implementing Units and Lessons**

**K-8 Science**

When planning to teach each Amplify Science unit, it is important to use the resources and tools that have been provided for you. The Unit Overview for each unit provides you information on *What’s in the Unit, Why* it is important that every Fayette County Public Schools student learn how to make sense of the phenomena or design problem being investigated, and *How* the teaching and learning will progress through the unit. A *Progress Build* is provided for you that describes the way in which students’ explanations of the central phenomenon should develop and deepen over the course of a unit. It is an important tool in understanding the design of the unit and in supporting students’ learning. A Progress Build organizes the sequence of instruction, defines the focus of the assessments, and grounds inferences about students’ understanding of the content.

The *Standards at a Glance* section identifies the specific Kentucky Academic Standards for Science (derived from the Next Generation Science Standards – NGSS) which are targeted by the sense-making process around the phenomena in the storyline or the problem targeted for a design solution. (in addition to correlated Common Core State Standards for ELA and Mathematics)

**Identifying the Three Dimensions**

Each Kentucky Academic Standard for Science is a performance expectation that is an integration of three distinct dimensions; Science and Engineering Practice, Crosscutting Concept, and a Disciplinary Core Idea. The **performance expectations are designed to describe what students should be able to do when instruction is complete**. They are not meant as learning objectives, and should not be treated as instructional strategies. Instead, use them as goals to guide the activities and lessons that you select, giving students learning experiences that will give them confidence in **demonstrating the performance expectations at grade level** for each dimension once it comes time for assessment.

Look at the disciplinary core ideas that correspond with a given performance expectation**. Identify what the students should know coming into your class and combine that information with date from formative assessments to identify at what level your students are entering instruction. In addition, you must clarify what the grade level expectation is for the student after the teaching and learning is complete.** The difference between those is the learning that must occur for the student to be successful.

You will need to **determine where your students are in their skill development for each science and engineering practice identified in the Performance Expectations through previous performance and formative assessments in addition to what level of performance is grade level appropriate for that practice when the teaching and learning is complete.** The difference between those is the learning that must occur for the student to be successful.

Now think about the crosscutting concepts. **Determine where your students are in their ability to use the Crosscutting Concept for making sense of a phenomena or designing a solution. Look at the previous grade level expectations in addition to formative assessment information you have from prior learning with the student in addition to what level of performance is grade level appropriate for that Crosscutting Concept when the teaching and learning is complete.** The difference between where they are starting and your end goal is the learning that must occur for the student to be successful.

**Ask the Right Questions**

Each step in the instructional sequences integrate the three dimensions ([practices](https://ngss.nsta.org/PracticesFull.aspx), [disciplinary core ideas](https://ngss.nsta.org/DisciplinaryCoreIdeasTop.aspx), and [crosscutting concepts](https://ngss.nsta.org/CrosscuttingConceptsFull.aspx)) into a single learning performance. As you plan for teaching, you may want to think about these questions:

* What are some commonly held student ideas (both troublesome and helpful) about this topic? How could instruction build on them?
* **What prior concepts do students need to learn to understand the core ideas?**
* What representations or media help students make sense of core ideas?
* **What practices could students engage in to explore phenomena and/or representations of this concept?**
* Are there crosscutting concepts that could support learning the core idea?
* What connections to other content areas could be emphasized as students engage in the instructional sequence?
* How do the **crosscutting concepts** in the foundation box support understanding of the associated **disciplinary core idea**?
* How will the crosscutting concepts assist or support in learning the disciplinary core idea or will the process work in reverse? Namely, as the understanding of the disciplinary core ideas develops, will it aid in understanding the broader crosscutting concept?

**References for use:**

* [Your Amplify Science Curriculum Resources](http://www.learning.amplify.com)