

# Key “Advances” in the NRC Framework

- **INTEGRATION:** 3 Dimensions of knowing science: Content, Practice and Crosscutting Concepts are integrated in instruction and in assessment.
- **EQUITY & COHERENCE:** Learning progresses over time for ALL students across ALL grades. Each grade builds on prior learning and provides foundation for later grades. Assumes that learning “sticks” and depth is progressively added.
- **ENGINEERING IN SCIENCE:** Explicit inclusion of engineering design principles and practices tied to science concepts; knowing how science is applied by engineering new technologies (devices or processes) to meet human needs.
- **FOCUS & RETENTION:** on a set of “core” science ideas explored more deeply; providing students numerous experiences with a core idea (i.e., less rushing to “cover” everything).
- **PRACTICES:** Shift from “inquiry” to “practices”:
  - More precise definition of inquiry: each of 8 science and engineering practices elaborated
  - Emphasis on higher order thinking (e.g., modeling, making evidence-based claims, critiquing arguments, designing and testing solutions);
  - Less emphasis solely on experimenting, naming variables, and discrete process skills as an end to themselves.
- **CONNECTIONS TO COMMON CORE:** The NGSS are aligned, by grade level and cognitive demand with the English Language Arts and Mathematics Common Core State Standards.