Kentucky Department of
EDUCATION

Kentucky Academic Standards for Science
At a Glance

The *Kentucky Academic Standards for Science* (2022) were approved by the Kentucky Board of Education on Dec. 6, 2022 and officially incorporated into law in July of 2023.

Focused highlights:

1. The **Writers Vision** is stated on page of the draft *Kentucky Academic Standards for Science*.
    a. Aligns with KRS 158.6453 requirements and public feedback.

2. **Design Considerations** are detailed on page 7 of the document.

3. **Architecture** provides grade level view, followed by standard breakdown which provides clarity to the depth of rigor required (beginning on page 14).
    a. View ten state models.
    b. Aligns with KRS 158.6453 requirements and public feedback.

4. **Organization of the Standards**: Within the architecture, the standards place an equal importance on both the mastery of important science concepts and disciplinary practices.
    a. Throughout their science education, students engage with the disciplinary tools of science—science and engineering practices and crosscutting concepts. (See pages 10 and 11.)
    b. Students use these tools to acquire, refine and extend knowledge and understanding of core science ideas within the three disciplinary lenses of physical science, life science and earth and space science.
    c. Students engage in the engineering design process as they solve problems or analyze solutions by applying science core ideas. (See page 8.)

5. **Overviews** were added for kindergarten through high school. These provide an overview of the key disciplinary science ideas at each grade and, for high school, discipline. Also included are the science and engineering practices and crosscutting concepts students are expected to use to demonstrate their understanding of these ideas.
    a. **Grade-band overviews** for engineering design describe the key components of the engineering design process. (See page 47, 96, 158 and 164.)
    b. See page 14 for the kindergarten overview, page 66 for grade 4 and pages 163 and 164 for high school. Additional examples of the specific overviews are identified in the Table of Contents.

6. **Changes of Note:**
    a. **Organization**—Each standard and its supporting information is found in its own table. (See page 12.)
    b. **Standards Modifications**: The language of six standards was modified to add clarity and coherence across progressions. These include 5-ESS3-1, 6-ESS2-2, 7-PS4-3, 8-LS4-3, 8-ESS3-2 and HS-PS1-3.
    c. **Grade Level Shifts**
        i. Grade 4
            1. **4-LS4-1** was moved from grade 3 as it connects with core ideas related to Earth and space science explored at grade 4.
        ii. Grade 6
            1. **6-PS2-4** moved from grade 7 to support Earth and space concepts at grade 7.
            2. **6-LS1-6** moved from grade 7 as it supports student understanding of the flow of energy at grade 6.
        iii. Grade 7
            1. **7-PS2-2** moved from grade 6 and **PS3-1** moved from grade 8 to support the core ideas of forces and motion explored in grade 7.
            2. **7-LS1-8** (sensory receptors) moved from grade 8 as it is a natural application of cellular organization and matter and energy flow in organisms explored in grade 7.
        iv. Grade 8
            1. **8-LS1-4** and **LS1-5** were moved from grade 7 to support core concepts and ideas related to heredity and reproduction explored in grade 8.
            2. **8-PS1-3** was moved from grade 6 to provide opportunities to bundle with the earth and space science concepts explored in grade 8. A disciplinary core idea **ESS3.A** was added to **8-PS1-3** to make explicit the connection to natural resources implied in this performance expectation.