NSTA Discussion Draft: Core Ideas (Science Anchors) in Science Education
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"The next generation of science standards and curricula at the national and state levels should be centered on a few core ideas and should expand on them each year, at increasing levels of complexity, across grades K-8. Today's standards are still too broad, resulting in superficial coverage of science that fails to link concepts or develop them over successive grades." NRC Report, *Taking Science to School: Learning and Teaching Science in Grades K-8*

Standards-based reform of science education is founded on the premise that fundamental improvement begins with a coherent, well-articulated set of specific content standards that are tied to a valid process of obtaining evidence of student understanding. With this coherence we have the possibility of aligning all elements of the education system—from teachers to test writers—in a seamless system that can work together to improve student achievement.

The reality is, however, that although states have similar standards for science education, there are significant differences in when, how, and what students are expected to learn. Since each state sets its own standards and measures performance with its own tests, there are sometimes gaps in helping students master key ideas in the sciences at every grade level. Students who transfer from state to state, or even from city to city, are especially at risk.

In addition, state science standards are often not clear and most standards are simply not aligned with valid assessments.

Many have advocated that to add coherence to the science education of our children we must identify a clearly defined set of core ideas in science that spell out to all stakeholders exactly what students from Maine to California are expected to know and be able to do in science.

These core ideas would provide an "anchor" and a national coherence with what we can expect all students to learn. Science Anchors would be identified at each grade level (or grade band) accompanied by examples of the student skills and knowledge that should be learned at that grade level (or grade band). A range of eligible content within each Science Anchor and sample assessment items for each Science Anchor could also be developed.

Science Anchors will help teachers to better manage their instruction and will also help stakeholders, such as professional societies, textbook companies, professional development providers, assessment providers, and others to work from a core set of agreed-upon key ideas in the sciences that are clearly aligned with assessments when developing ancillary and support materials for the science education market.

Comments and suggestions on the idea of Science Anchors should be directed to jpeterson@nsta.org