The adoption of new standards usually stands out as a defining event for public school systems, especially in the eyes of the public and the press. However, this step is often the easiest one. What is often missed, and is much more important, is what comes after adoption. Is there a vision for these standards and a coherent plan of action for implementing them? This issue of State Innovations focuses on Maryland, one of the early states adopting the Next Generation Science Standards (NGSS), and its plan for adoption and beyond. A coherent plan for NGSS implementation is particularly important, as it presents an expanded vision for teaching and learning of science as compared to what is typically happening in most K-12 science classrooms today. The Maryland State Board of Education’s plan and the title of this State Innovations uses a proverb often attributed to French author Antoine de Saint-Exupery: “A goal without a plan is just a wish.”

Background

Maryland is a science-rich state with many private high-tech companies and federal agencies that utilize scientific and medical advances. The University of Maryland and the other higher education institutions in Maryland are well-respected for providing a quality education for Maryland students. In 2013, the Maryland state assessment system reported 67 percent of 5th graders and 71 percent of 8th graders proficient in science. But at the same time, recent NAEP scores revealed that Maryland’s 4th and 8th grade students were not significantly different from the national average—just 33 percent of 4th graders and 32 percent of 8th graders were proficient in science according to 2009 and 2011 data from this national assessment. Maryland is a diverse state and that often presents challenges to educators, and this is especially true for the implementation of new standards.

In 2011, Maryland began to address these achievement issues by becoming one of 26 lead states participating in the development of the Next Generation Science Standards. Locally, Maryland created a broad-based 41-member team to work and communicate within the state. At the same time, a subset of this group was tasked with working with the teams from the other lead states on the actual writing of the standards and with bringing these drafts back to the state for comments. The overall goal of the lead states was to develop science standards that identified science and engineering practices and content that all K-12 students should master in order to be fully prepared for college, career, and citizenship.

Maryland’s Plan

The NGSS were released April 9, 2013. In June, 2013 the Maryland State Board of Education voted to adopt the NGSS along with a plan for implementation of the standards. They established early targets, including designating a strategic leadership team to oversee the process, drafting a vision statement for the NGSS in Maryland, developing a preliminary timeline, developing appropriate resources, and engaging critical stakeholders in the work, all of which were intended to ensure smooth implementation after adoption. Below is a more detailed look at the state’s post-adoption steps.

The Vision: The Maryland State Department of Education’s (MSDE) vision statement reads, “We believe that the ever-changing world of the 21st century demands increased proficiency in science, technology, engineering and mathematics (STEM) for all.” This vision translates into Maryland continuing to be an international leader in science literacy and STEM education and providing a path to a college and career-ready citizenry. The vision statement concludes that “implementation of the Next Generation Science Standards will ensure that all Maryland students have the essential knowledge and understanding of science and engineering neces-
sary to engage in public discussions on science-related issues, to be critical consumers of scientific information related to their everyday lives, and to become lifelong learners and global leaders.” This first step was important to provide the rationale and guidance for the state’s decision-making process. It also is clear the NGSS provided leverage to develop the vision.

**Timeline:** The state board, with the MSDE, developed a preliminary timeline to keep the process moving. The timeline (reproduced in chart 1) schedules full implementation to occur in the 2017-2018 school year. The timeline has several key areas to consider: the development of a preK-12 scope and sequence of courses, review of high school courses, provision of instructional models, provision of technical assistance, and alignment of local curricula to state documents. This timeline allows Maryland time to carefully examine each area in order to effectively advance the state’s vision.

**Communications and Partnership Plan:** The MSDE developed talking points for communication purposes and a strategy for involving others to assist in communication and outreach. Some of the talking points include:

- All students will be college and career ready,
- PreK-12 science instruction is rigorous and high quality,
- Instruction supports the governor’s initiatives, and
- Maryland’s goal of becoming an international leader in science literacy and STEM education.

Partnerships were also addressed with the goal of establishing working relationships with institutions of higher education, various agencies, and the business community to support and assist the implementation of the standards.

**Evaluation Plan:** An evaluation tool was included to see whether the MSDE is successfully implementing the plan even as it is being put into action. This includes identifying the role of the MSDE in capacity building, coordination, funding, and monitoring. The department recognizes that keeping track of these functions will be helpful in determining how the plan is working as the implementation moves forward.

**Conclusion**

The Maryland State Board of Education recognizes that its plan will be a living document. It can be used to help structure and guide more detailed planning, particularly in those areas still in transition, such as the development of new science assessments, teacher/principal evaluation, and accountability. The plan illustrates the board’s willingness to commit to action now and to prepare for changes needed throughout the adoption process as new information becomes available. The MSDE has an initial plan and can now work toward the goal of Maryland as an international leader in science literacy and STEM education and in creating students that are college ready and career ready.

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**Endnote**