



SCIENCE EDUCATION



Next Generation Science Standards: “All standards for all students”

In 2013, Maryland adopted the Next Generation Science Standards (NGSS) as the Maryland Science Standards for K–12 science education. The NGSS were developed by a group of 26 lead states, including Maryland, and included input from professional scientists, college/university educators, policy-makers, and K–12 educators to identify the knowledge and skills all students need to become scientifically literate.

The NGSS combine and emphasize:

- Practices of real scientists and engineers.
- Core Ideas from the three major scientific disciplines: earth/space science, life science (biology), and physical science (chemistry and physics), as well as engineering and the application of science.
- Crosscutting concepts: ideas that share broad importance across disciplines, are key to understanding more complex topics, and relate to life experiences or societal issues (e.g., cause and effect, patterns).

Science Curriculum

The new HCPSS K–12 science curriculum is aligned to the NGSS. By teaching “all standards for all students,” our curriculum gives every student a broad and robust science education while:

- Gaining a deep understanding of basic science concepts.
- Applying scientific and technical information systematically and rationally.
- Developing lifelong learning habits, because science is continually evolving and changing.
- Leveraging individual strengths, interests, and goals.
- Learning through inquiry and discovery, using science practices to develop deep understanding and solve real world problems.



HCPSS has completed transition to the NGSS-aligned curriculum in elementary (K–5) and middle (6–8) school. The new high school curriculum will be completely aligned by the 2018–19 school year.



The high school science curriculum will include several significant changes:

- **Breadth:** All students will take core courses in all three science disciplines: Earth/space, physical (chemistry and physics), and life science (biology). These courses provide each student with broad, deep science literacy and the core knowledge across all scientific disciplines needed for ongoing science learning.
- **Flexibility:** Students may choose courses and course sequences that meet individual goals and interests, and may move between regular and advanced level courses at any point. All students may pursue advanced (G/T or AP) science course options, including those who were not in G/T in middle school.
- **Advanced learning options:** All students have opportunities to take additional enrichment courses once the core courses are completed and may begin AP as early as grade 11.

SCIENCE EDUCATION in the HCPSS, *continued*

MISA Assessment

Maryland Integrated Science Assessment (MISA) is Maryland's new NGSS-aligned standardized science assessment. MISA replaces the MSA Science and HSA Biology tests in all Maryland schools and is phased in beginning in 2017.

The Science MSA was administered for the last time during the 2015–16 school year. The Biology HSA was administered for the last time during the 2016–17 school year.

Elementary and middle school students take the MISA in Grades 5 and 8. High school students take the MISA after successfully completing high school coursework in all three main science disciplines: earth/space science, life science (biology), and physical science (chemistry and physics). Most students will take the MISA in Grade 11.

MISA Timeline

2017–18 SY	All Maryland students in Grades 5 and 8 will participate in MISA operational testing.
2018–19 SY	HCPSS high school students will first take MISA, but will not be required to pass. MISA for Grades 5 and 8 will be fully implemented.
Class of 2020	MISA participation will be a graduation requirement for the Class of 2020 (current 10th graders) unless the student has already participated in the Biology HSA.
Class of 2021 and after	Beginning with the Class of 2021 (current 9th graders), a MISA pass score will be a graduation requirement for all cohorts. Pass scores will be set by the Maryland State Department of Education (MSDE).



For more information
about NGSS, visit:
nextgenscience.org



For more information
about the HCPSS
Science program, visit:
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