



/ THE UNIVERSITY OF THE STATE OF NEW YORK / ALBANY, NY 12234

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OFFICE OF CURRICULUM AND INSTRUCTION

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2. Student performance expectations (PEs) may be taught in any sequence or grouping within a course.
3. The highlighted performance expectations are performance expectations that are unique to New York State.
4. An asterisk (\*) indicates an engineering connection to a practice, core idea, or crosscutting concept.
5. The Clarification Statements are examples and additional guidance for the instructor. (NYSED) or a highlight indicates New York specific statement/wording.
6. The Assessment Boundaries delineate content limits of concepts that may be assessed in large-scale assessments.
7. Within the standards, the section *A Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas*, except for statements that contain (NYSED). The material is integrated and reprinted with permission from the National Academy of Sciences.
8. Within the standards, Three Connection Boxes (not shown in the diagram), located below the Foundation Boxes, are designed to support a coherent vision of the standards by showing how the performance expectations in each standard connect to other PEs in science, as well as to Common Core State Standards. The three boxes include:
  - x Connections to other DCIs in this grade level. This box contains the names of science topics in other disciplines that have related disciplinary core ideas at the same grade level. For example, both Physical Science and Life Science performance expectations contain core ideas related to Photosynthesis and could be taught in relation to one another.
  - x Articulation of DCIs across grade levels. This box contains the names of other science topics that either 1) provide a foundation for student understanding of the core ideas in this set of performance expectations (usually at prior grade levels); or 2) build on the foundation provided by the core ideas in this set of PEs (usually at subsequent grade levels).
  - x Connections to the New York State Next Generation Learning Standards. This box contains the coding and names of [New York State Next Generation Mathematics Learning Standards \(2017\)](#), and [New York State Next Generation English Language Arts Learning Standards \(Revised 2017\)](#) that align to the performance expectations. An effort has been made to ensure that the mathematical skills students need for science were taught in a previous year where possible.









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|---|-----------|--|------------------------|---|--|
| HS. Waves and Electromagnetic Radiation | HS-PS4-1. | Using Mathematics and Computational Thinking | PS4.A: Wave Properties | Cause and Effect  |  |
| HS. Waves and Electromagnetic Radiation | HS-PS4-2. | Asking Questions and Defining Problems       | PS4.A: Wave Properties | Stability and Change; <b>Connections to Engineering, TecN 509.95( and</b> |  |

