



# An Introduction to the Office of Curriculum and Instruction Science Page



New York State  
EDUCATION DEPARTMENT  
Knowledge > Skill > Opportunity



## TODAY'S OBJECTIVES

- Visit the [NYSED Science page](#).
- Explore the science resources available.
- Discover and understand the organization/structure/use of the NYSP1 2SLS and the aligned resources.

## ☰ Science

Science Updates

Science Learning Standards

Science Standards  
Implementation Resources ▶

Science Resources ▶

Science Memos, Waivers, and  
Guidance

Parent Resources for Science

Science FAQ

Science Assessments

Science Student /Educator  
Awards and Scholarships

Science Associations

Science Archive ▶

# LET'S BEGIN... NAVIGATING THE NYSED SCIENCE PAGE

Please locate the following links and explore:

- Science Updates
- Science Resources
- Science Memos, Waivers, and Guidance
- Parent Resources for Science
- Science FAQ
- Science Student/Educator Awards and Scholarships
- Science Associations

# HIGH SCHOOL COURSE MAPS

- These High School Course Maps are aligned to:
  - ✓ The new Regents examinations in science
  - ✓ The New York State P-12 Science Learning Standards
  
- The four High School Course Maps are:
  - ✓ [Earth and Space Sciences](#)
  - ✓ [Life Sciences: Biology](#)
  - ✓ [Physical Sciences: Chemistry](#)
  - ✓ [Physical Sciences: Physics](#)



STATE EDUCATION DEPARTMENT / THE UNIVERSITY OF THE STATE OF NEW YORK / ALBANY, NY 12234  
 OFFICE OF CURRICULUM AND INSTRUCTION  
 Room 860 EBA  
 Phone: (518) 474-5922

**Science High School Course Maps for [Physical Sciences: Physics](#) Courses that will Culminate in a Corresponding Regents Examination in Science**

**Background**  
 The New York State P-12 Science Learning Standards are based on guiding documents ([A Framework for K-12 Science Education](#)<sup>1</sup> and the [Next Generation Science Standards](#)<sup>2</sup>) grounded in the most current research in science and scientific learning. They reflect the importance of every student's engagement with natural scientific phenomenon at the nexus of three dimensions of learning: Science and Engineering Practices, Disciplinary Core Ideas, and Cross-cutting concepts. Performance expectations are the way to integrate the three dimensions



STATE EDUCATION DEPARTMENT / THE UNIVERSITY OF THE STATE OF NEW YORK / ALBANY, NY 12234  
 OFFICE OF CURRICULUM AND INSTRUCTION  
 Room 860 EBA  
 Phone: (518) 474-5922

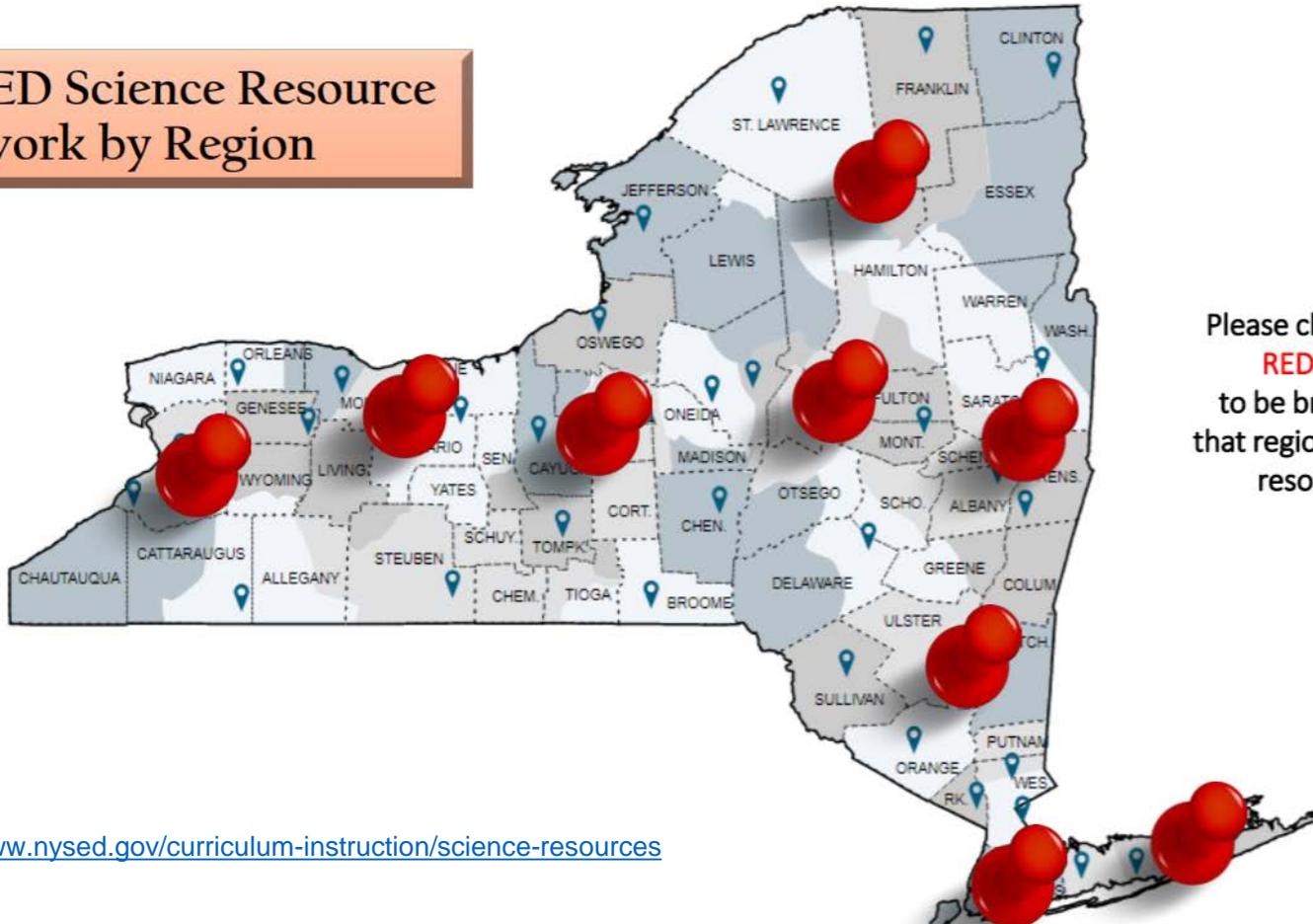
**Table 1** contains the **recommended performance expectations** for guiding curriculum programming and instruction within four high school science courses aligned to Regents examinations. Please note: no course sequences have been assumed in this model and the map does not preclude other performance expectations from being taught.

Example Course Map Information					
Topic	PE #	A Framework for K-12 Science Education: Scientific and Engineering Practices	A Framework for K-12 Science Education: Disciplinary Core Ideas	A Framework for K-12 Science Education: Crosscutting Concepts	For performance expectations that appear in more than one course the specific concepts for the performance expectation within this course are outlined.
Topic area the Performance expectation is categorized under.	Performance expectation number	Scientific and Engineering Practice that is apart of the Performance Expectation.	Disciplinary Core Idea that is apart of the Performance Expectation.	Crosscutting Concept that is apart of the Performance Expectation.	Information provided for ONLY performance expectations that appear in more than 1 high school course.

Physical Sciences: Physics -Instructional sequences are not assumed-					
Topic Area	PE #	K-12 Science Education Framework: Scientific and Engineering Practices	K-12 Science Education Framework: Disciplinary Core Ideas	K-12 Science Education Framework: Crosscutting Concepts	For performance expectations that appear in more than one course. The specific concepts for the performance expectation within this course are outlined.
HS. Structure and Properties of Matter	HS-PS1-8.	Developing and Using Models	PS1.C: Nuclear Process	Energy and Matter	Scale of energy released.
HS. Forces and Interactions	HS-PS2-1.	Analyzing and Interpreting Data	PS2.A: Forces and Motion	Cause and Effect	

## NYSED Science Resource Network by Region



Please click on the  
**RED TACK**  
to be brought to  
that region's science  
resources.

<http://www.nysed.gov/curriculum-instruction/science-resources>



# NYSED STATE SCIENCE NETWORK



# NYSED SCIENCE STANDARDS QUICK GUIDE

## REFLECT ON THE FOLLOWING:

- How will the Quick Guide help me understand the New York State P-12 Science Learning Standards?
- Where is the link to Implementation Timeline?
- What are the differences between Science and Engineering Practices, Disciplinary Core Ideas, and Crosscutting Concepts?



## New York State P-12 Science Learning Standards Quick Guide

### What are the New York State P-12 Science Learning Standards (NYSP-12SLS)?

Adapted from the Next Generation Science Standards in 2016, the NYSP-12SLS are a series of performance expectations that define what students should understand and be able to do because of their study of science. The NYSP-12SLS are based on the Framework for K-12 Science Education developed by the National Research Council and the Next Generation Science Standards as well as guiding documents grounded in the most current research in science and scientific learning. These standards reflect the importance of every student's engagement with natural scientific phenomenon at the nexus of three dimensions of learning; Science and Engineering Practices, Disciplinary Core Ideas, and Crosscutting concepts.

### What are the three dimensions of the New York State P-12 Science Learning Standards?

Below is a quick introduction to the Science and Engineering Practices, Disciplinary Core Ideas, and Crosscutting Concepts.

For more information, please visit the [Introduction to the New York State P-12 Science Learning Standards](http://www.nysed.gov/common/nysed/files/programs/curriculum-instruction/nyscienceintro.pdf) (<http://www.nysed.gov/common/nysed/files/programs/curriculum-instruction/nyscienceintro.pdf>).

Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
<p>⇒ Science and Engineering Practices describes (a) the major practices that scientists employ as they investigate and build models and theories about the world and (b) a key set of engineering practices that engineers use as they design and build systems.</p> <p>⇒ Listed below are the eight science and engineering practices from the Framework:</p> <ol style="list-style-type: none"><li>1. Asking questions and defining problems</li><li>2. Developing and using models</li><li>3. Planning and carrying out investigations</li><li>4. Analyzing and interpreting data</li><li>5. Using mathematics and computational thinking</li><li>6. Constructing explanations and designing solutions</li><li>7. Engaging in argument from evidence</li><li>8. Obtaining, evaluating, and communicating information</li></ol>	<p>⇒ Disciplinary Core Ideas are built on the notion of learning as a developmental progression. They are designed to help children continually build on and revise their knowledge and abilities, starting from their curiosity about what they see around them and their initial conceptions about how the world works.</p> <p>⇒ The goal is to guide their knowledge toward a more scientifically based and coherent view of the natural sciences and engineering, as well as of the ways in which they are pursued and their results can be used.</p>	<p>⇒ Crosscutting Concepts are meant to give students an organizational structure to understand the world and help students make sense of and connect Core Ideas across disciplines and grade bands.</p> <p>⇒ Listed below are the seven crosscutting concepts from the Framework:</p> <ol style="list-style-type: none"><li>1. Patterns</li><li>2. Cause and Effect</li><li>3. Scale, Proportion, and Quantity</li><li>4. Systems and System Models</li><li>5. Energy and Matter in Systems</li><li>6. Structure and Function</li><li>7. Stability and Change of Systems</li></ol>

### Q&A for Science Educators

**Q: When will the New York State P-12 Science Learning Standards (NYSP-12SLS) and their corresponding state assessments be implemented?** The implementation timeline can be found at found on the [Science Curriculum and Instruction](http://www.nysed.gov/common/nysed/files/programs/curriculum-instruction/science-timeline.pdf) website. Visit: <http://www.nysed.gov/common/nysed/files/programs/curriculum-instruction/science-timeline.pdf>

**Q: Are there High School Course maps in Science?** Yes, there are NYSP-12SLS aligned High School course maps for [Biology, Earth and Space Sciences, Chemistry, and Physics](http://www.nysed.gov/curriculum-instruction/science-standards-implementation-resources). Visit: <http://www.nysed.gov/curriculum-instruction/science-standards-implementation-resources> to access the High School Course maps in Science.

**Q: Where can I learn more about NYSP-12SLS?** You can learn more about the [NYS P-12 Science Learning Standards](http://www.nysed.gov/curriculum-instruction/science-learning-standards) by visiting our NYSED web site. Visit: <http://www.nysed.gov/curriculum-instruction/science-learning-standards>

## A Parent's Guide to the New York State P-12 Science Learning Standards

### What are the New York State P-12 Science Learning Standards?

*The NYS P-12 Science Learning Standards are the educational goals for all of New York State's students from prekindergarten through Grade 12 in Science.*

### What is Science and why is it important for my child?

*Science is the scientific approach to understanding the natural world. Among these are a demand for explanations supported by claims and evidence that are testable. Branches of P-12 science education include: life science, physical science, as well as Earth and space sciences.*

*Over the past several decades, streams of research studies, reports, policies, and publications have documented the benefits of students' science education to better prepare them for the workforce and college pathways. Careers in Science, Technology, Engineering, and Mathematics (STEM) will only grow in the next decade, making it essential for accessibility to equitable learning opportunities for all students to excel.*

### When will the NYS P-12 Science Learning Standards be implemented?

*The implementation timeline can be found at found on the [Science Curriculum and Instruction](#) website.*

### How can I learn more?

*You can learn more about the [NYS P-12 Science Learning Standards](#) by talking to your child's teacher or visiting our NYSED web site.*



Scan the QR code to access this flyer on the NYSED web site for live links.



### Parent Resources

Supporting Learning at Home

- ⇒ [New York State Science Standards Implementation Resources](#)
- ⇒ [New York State Parent Teacher Association \(PTA\) Parent Resources](#)
- ⇒ [Resources for Parents of Students with Disabilities](#)
- ⇒ [Multilingual Learner/English Language Learner Parent Resources](#)
- ⇒ [New York State Education Department Office of Curriculum & Instruction](#)  
Email: [EMSCURRIC@nysed.gov](mailto:EMSCURRIC@nysed.gov)

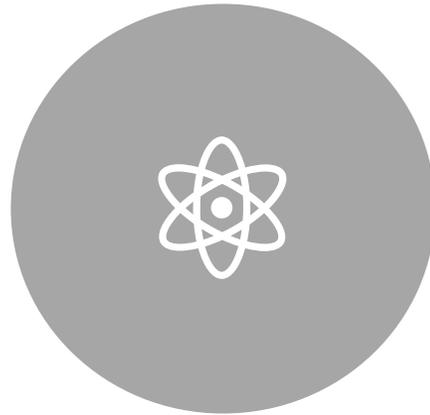
# NYSED PARENT RESOURCES FOR SCIENCE

## REFLECT ON THE FOLLOWING:

- How can I use this resource in my school? In my classroom?
- What is the best way to share this with families/caregivers?



SCIENCE  
FREQUENTLY  
ASKED  
QUESTIONS



SCIENCE  
ASSOCIATIONS



SCIENCE  
AWARDS AND  
SCHOLARSHIPS



SCIENCE  
ASSESSMENTS

OTHER IMPORTANT RESOURCES

# Closure

Reflect on the following:

*What did I learn about the available resources on the [NYSED Science page](#)?*

*Which discovered resources will best support me in my classroom?*

