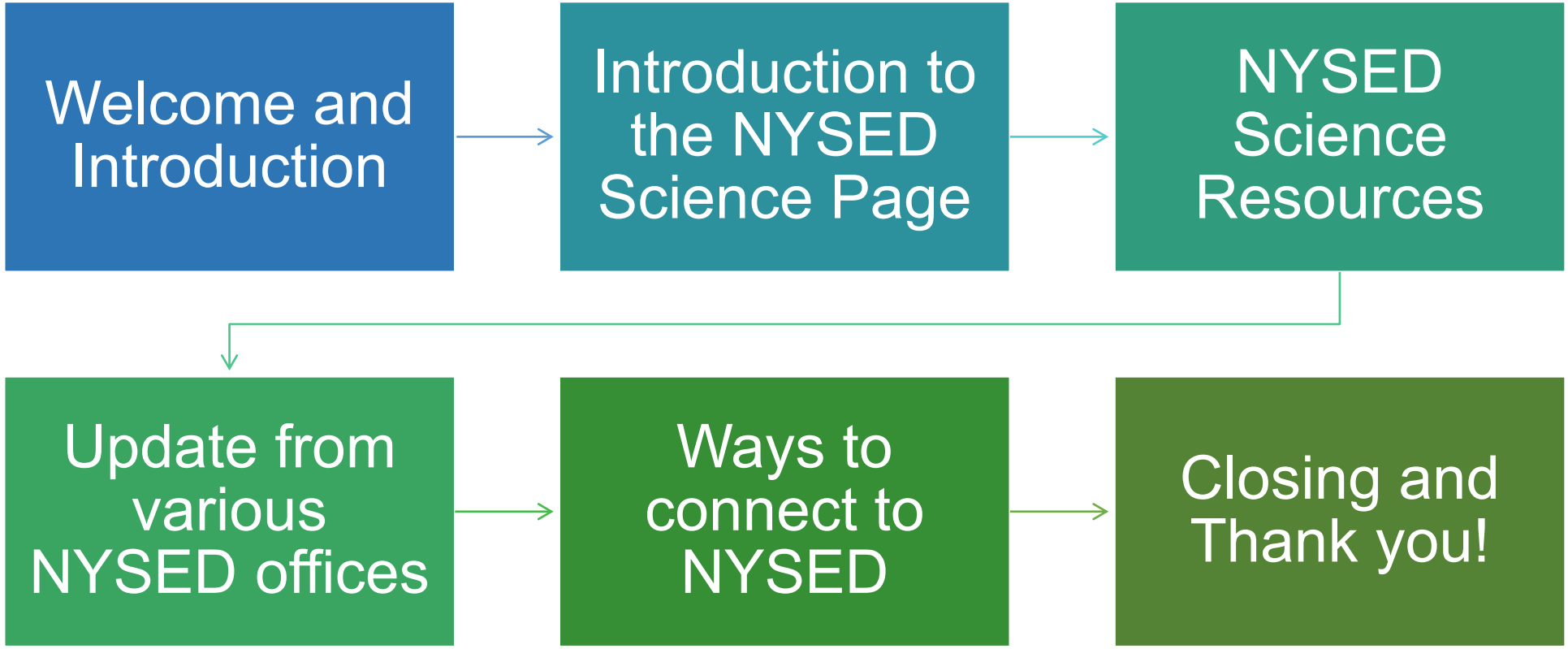
NYSED Statewide Science Update

Office of Curriculum and Instruction
March 2022

New York State EDUCATION DEPARTMENT
Knowledge › Skill › Opportunity

Agenda


Welcome and Introduction
Introduction to the NYSED Science Page
NYSED Science Resources
Update from various NYSED offices
Ways to connect to NYSED
Closing and Thank you!

NYS P-12 Science LEARNING STANDARDS

Welcome!
Please scan the QR code above to be taken to the NYSED Science page.

NYSED Science page

NYSED Curriculum And Instruction Science Page

- 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

Science

The New York Education Department Office of Curriculum and Instruction provides guidance for the development and implementation of New York State P-12 Science Learning Standards. The purpose of this New York State P-12 Science Learning Standards Implementation Roadmap is to serve as an at-a-glance guide for stakeholder groups to facilitate attainment of the Statewide Strategic Plan for Science. This site is designed to assist in implementation of the current and the transition to the new science standards. Resources can be adapted by stakeholders at the local, regional, and state levels.

For information on Copyright Permission refer to NYSED's Permission for webpage.

Recent Updates

Here are some quick links to newly released science guidance and resources.

- Science Professional Learning Turnkey Guides (February 2022)
- NYSP12SLS Quick Guide (February 2022)
- Providing Laboratory Activities for Living Environment Part D Virtually During the 2021-22 School Year (September 2021)
- Virtual Laboratory Experiences and the 1,200 Minute Science Laboratory Requirement for the 2021-22 School Year (August 2021)
- NYSP12SLS Implementation Timeline (updated April 2021)

Science

- Science Updates
- Science Learning Standards
- Science Standards Implementation Resources
  - Strategic Plan & Learning Standards
  - Implementation Roadmap and Timeline
  - New York State P-12 Science Learning Standards Quick Guide
  - Science Professional Learning Turnkey Guides
  - High School Course Maps
  - Additional Implementation Resources
- Science Resources
- Science Memos, Waivers, and

Science Standards Implementation Resources

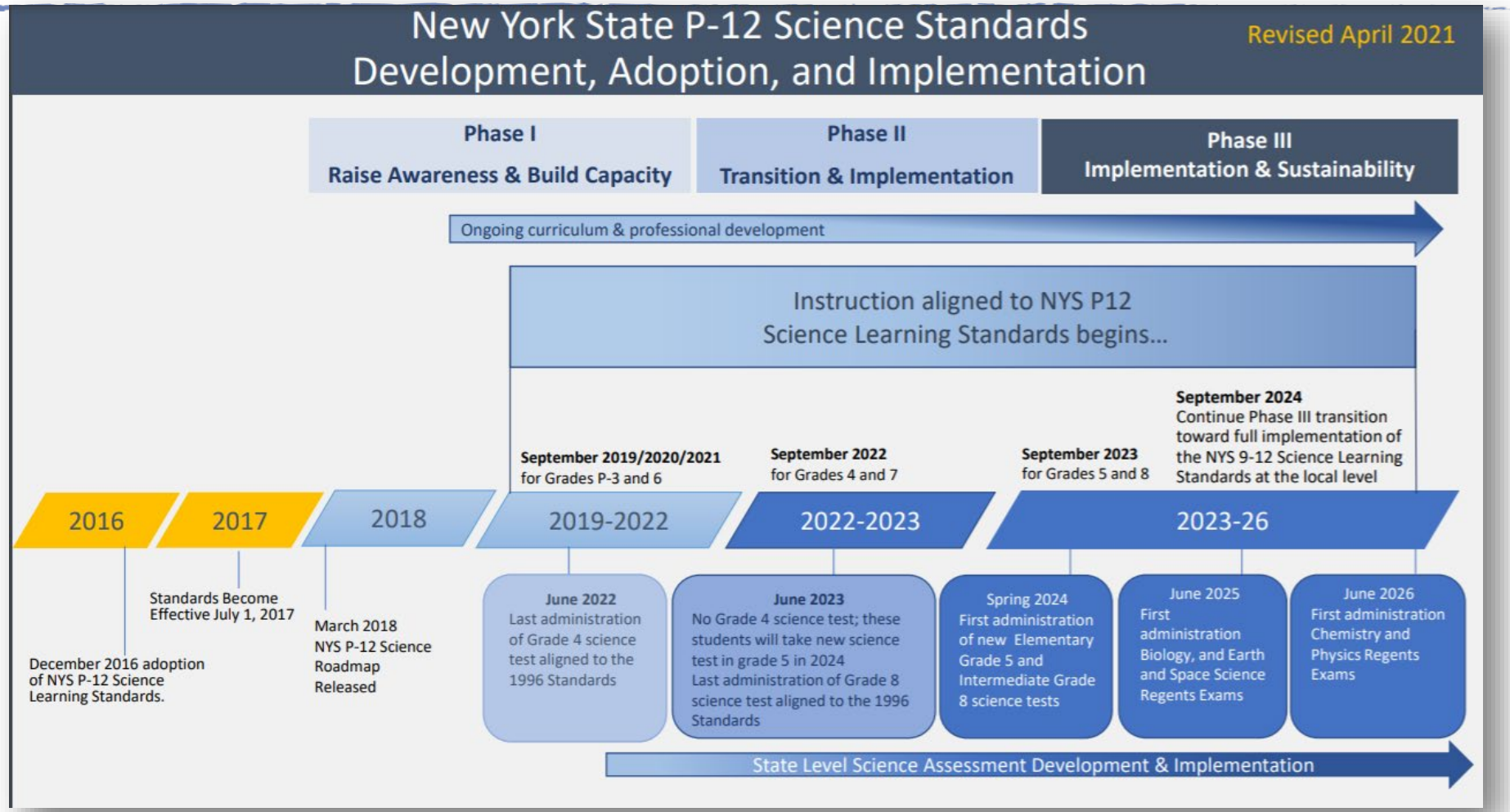


This page houses valuable Science Standards Implementation Resources to assist educators and administrators in local implementation of the New York State P-12 Science Learning Standards (NYSP-12SLS).

These resources support achievement of the vision of the NYSP-12SLS to ensure the teaching and learning of science for all P-12 students by providing equitable access to exemplary teachers, science curriculum programming, instructional practices, and standards-based assessments that are reflective of research and best practices, along with quality resources and support from stakeholders at large.

- Statewide Strategic Plan for Science and Science Learning Standards
- Science Implementation Roadmap and Timeline
- New York State P-12 Science Learning Standards Quick Guide
- Science Professional Learning Turnkey Guides
- Science High School Course Maps

Science Implementation Timeline Map (Updated April 2021)



ROADMAP INTRODUCTION

The purpose of this New York State P-12 Science Learning Standards Implementation Roadmap is to serve as an at-a-glance guide for all stakeholder groups to facilitate attainment of the Statewide Strategic Plan for Science. This Roadmap is designed to assist in the transition to the new science standards as a resource that can be adapted by stakeholders at the local, regional, and state levels. Six key component areas as identified below, include a major goal supported by objectives and activities included in the Statewide Strategic Plan for Science. Effective standards implementation requires a system-wide commitment. The activities serve as a connection between the Statewide Strategic Plan for Science and this Roadmap is part of a larger comprehensive science standards systems implementation plan. Specific activities are suggested to be carried out through various actions by all stakeholder groups in a designated timeframe to create consistency across multiple levels over a multi-year, three-phase, implementation process. This roadmap is a tool that can be used to facilitate opportunities to engage every student in quality science education throughout their school career.

- **Outline of Contents**
  - Component areas

All Phases	Phase I	Phase II	Phase III
• Standards • Curriculum • Professional Development to Enhance Instruction • Assessment • Materials and Resources Support • Administrative and Community Support	• Standards • Curriculum • Professional Development to Enhance Instruction • Assessment • Materials and Resources Support • Administrative and Community Support	• Standards • Curriculum • Professional Development to Enhance Instruction • Assessment • Materials and Resources Support • Administrative and Community Support	• Standards • Curriculum • Professional Development to Enhance Instruction • Assessment • Materials and Resources Support • Administrative and Community Support

  - Stakeholder groups
    - New York State Education Department-NYSED
    - Professional Learning Networks, Organizations and Associations
      - Teacher Centers, Department of Environmental Conservation, New York State Cultural Center, Regional Information Centers, STEM Hubs, Professional Associations, Higher Education Institutions, Informal Science Institutions, Business and Industry Partners
    - Educational Systems Phase
      - Big 5/BOCES/Districts
  - Phases of implementation/PROPOSED Timeframes
    - **Phase I: Raise Awareness and Build Capacity** 07/2017-08/2019
    - **Phase II: Transition and Implementation** 09/2019-08/2023
    - **Phase III: Implementation and Sustainability** 09/2023-ongoing
- **General Organization Structure of the Roadmap**
  - Each component area is identified by a capital letter (A=Standards), with each objective identified by the component area letter and an objective number (A1=1st Standard objective). Each activity is identified by the key component area, the objective number and a lower-case letter (A1a=first activity within Standards component objective 1).
  - A checked box(es) identifies the phase(s) of implementation that an activity should be addressed by stakeholder groups. Activities may be addressed in more than one phase of implementation and may have different actions based on the stakeholder group and phase.

NYS P-12 Science Learning Standards Implementation Roadmap

MST to NYSP12SLS

Learning Standards for

Mathematics, Science, and Technology

Revised Edition
March 1996

New York State P-12 Science Learning Standards

P. Physical Sciences

Students who demonstrate understanding can:

P-PS1-1. **Ask questions and use observations to test the claim that different kinds of matter exist as either solid or liquid.** [Clarification Statement: Emphasis should be on observing and describing similarities and differences between solids and liquids based on their physical properties. Solids and liquids can be compared and categorized (sorted) based on those properties.]

P-PS2-1. **Use tools and materials to design and build a device that causes an object to move faster with a push or a pull.*** [Clarification Statement: Emphasis should be on developing an interest in investigating forces (pushes or pulls). Examples of forces could include a string attached to an object being pulled or a ramp to increase the speed of an object.] [Assessment Boundary: Assessment is limited to relative measures of speed (slower, faster)]

P-PS4-1. **Plan and conduct investigations to provide evidence that sound is produced by vibrating materials.** [Clarification Statement: Examples of vibrating materials could include percussion instruments (e.g. drum, triangle), string instruments (e.g. guitar, piano), wind instruments (e.g. recorder, whistle), and audio speakers.]

The performance expectations above were developed using the following elements from the NRC document *A Framework for K-12 Science Education*

Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
Asking Questions and Defining Problems Asking questions and defining problems in grades PK–2 builds on prior experiences and progresses to simple descriptive questions that can be tested. • Ask questions based on observations to find more information about the designed world. (P-PS1-1) **Planning and Carrying Out Investigations** Planning and carrying out investigations to answer questions or test solutions to problems in PK–2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions. • With guidance, plan and conduct an investigation in collaboration with peers. (P-PS2-1),(P-PS4-1) **Analyzing and Interpreting Data** Analyzing data in PK–2 builds on prior experiences and progresses to collecting, recording, and sharing observations. • Record information (observations, thoughts, and ideas). (P-PS1-1) • Analyze data from tests of an object or tool to determine if it works as intended. (P-PS2-1) ***Connections to Nature of Science*** **Scientific Investigations Use a Variety of Methods** • Scientists use different ways to study the world. (P-PS2-1),(P-PS4-1)	**PS1.A: Structure and Properties of Matter** • (NYSED) Different kinds of matter exist and many of them can be either solid or liquid. Matter can be described, categorized, and sorted by its observable properties. (P-PS1-1) **PS2.A: Forces and Motion** • Pushes and pulls can have different strengths and directions. (P-PS2-1) • Pushing or pulling on an object can change the speed or direction of its motion and can start or stop it. (P-PS2-1) **PS3.C: Relationship Between Energy and Forces** • (NYSED) A push or a pull may cause stationary objects to move, and a stronger push or pull in the same or opposite direction makes an object in motion speed up or slow down more quickly. (secondary to P-PS2-1) **PS4.A: Wave Properties** • Sound can make matter vibrate, and vibrating matter can make sound. (P-PS4-1) **ETS1.A: Defining Engineering Problems** • A situation that people want to change or create can be approached as a problem to be solved through engineering. Such problems may have many acceptable solutions. (P-PS2-1)	**Patterns** • Patterns in the natural and human designed world can be observed and used as evidence. (P-PS1-1),(P-PS4-1) **Cause and Effect** • Simple tests can be designed to gather evidence to support or refute student ideas about causes. (P-PS2-1),(P-PS4-1)

Connections to other DCIs in prekindergarten: P.LS1.A (P-PS2-1); P.LS1.D (P-PS4-1)

Articulation of DCIs across grades K-2: K.PS1.A (P-PS1-1); K.PS2.A (P-PS2-1); K.PS2.B (P-PS2-1); K.PS3.C (P-PS2-1); 1.PS4.A (P-PS4-1)

New York State Next Generation Learning Standards Connections:

ELA/Literacy –

PKR1	Participate in discussions about a text. (P-PS1-1),(P-PS2-1),(P-PS4-1)
PKR4	Exhibit an interest in learning new vocabulary. (P-PS1-1),(P-PS2-1),(P-PS4-1)
PKW2	Use a combination of drawing, dictating, oral expression, and/or emergent writing to name a familiar topic and supply information in child-centered, authentic, play-based learning. (P-PS1-1),(P-PS2-1),(P-PS4-1)
PKW3	Use a combination of drawing, dictating, oral expression, and/or emergent writing to narrate an event or events in a sequence. (P-PS1-1),(P-PS2-1),(P-PS4-1)
PKW7	Engage in a discussion using gathered information from experiences or provided resources. (P-PS1-1),(P-PS2-1),(P-PS4-1)
PKSL2	Interact with diverse formats and texts. (P-PS1-1),(P-PS2-1),(P-PS4-1)
PKSL3	Identify the speaker. (P-PS1-1),(P-PS2-1),(P-PS4-1)
PKSL5	Create a visual display. (P-PS1-1),(P-PS2-1),(P-PS4-1)

Mathematics –

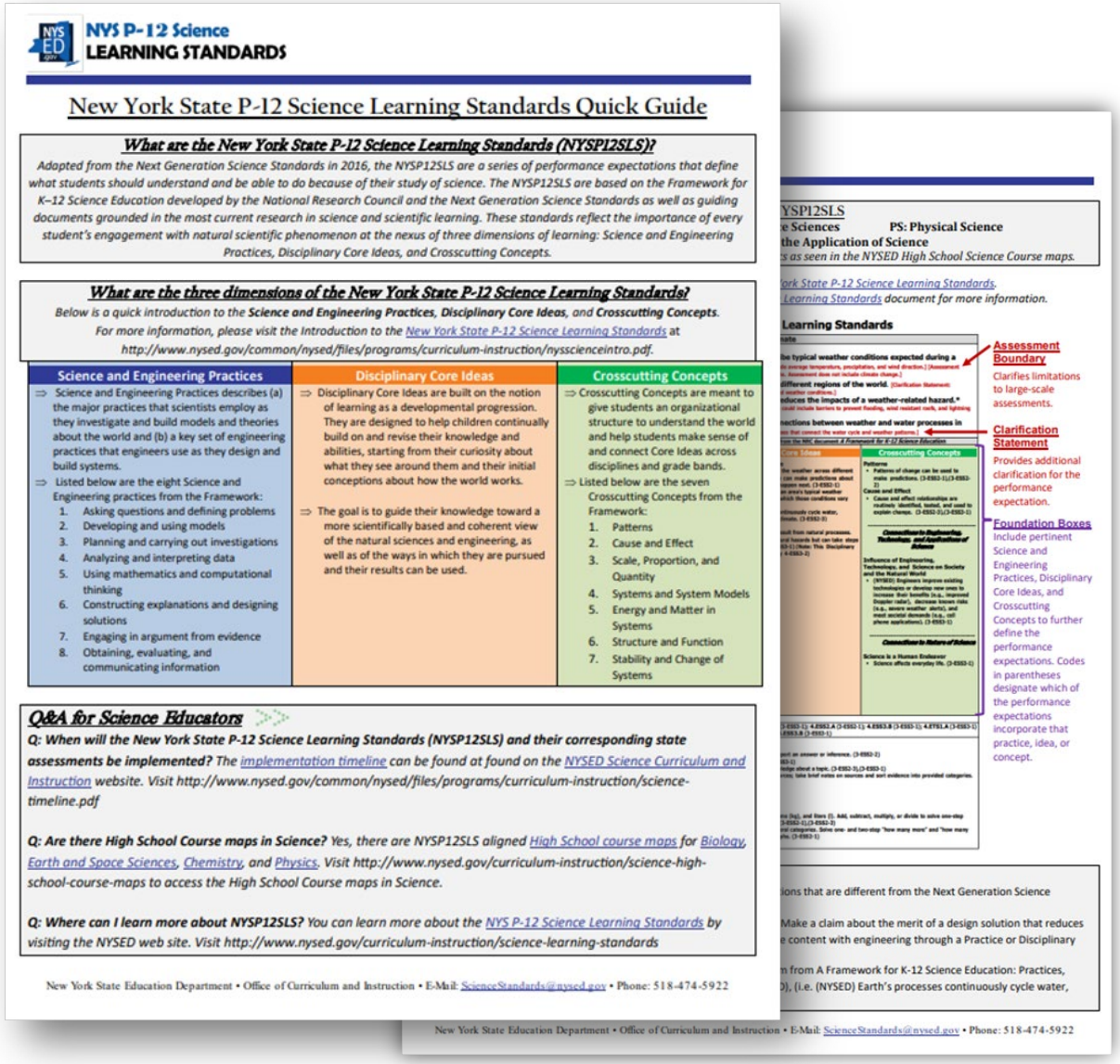
MP.4	Model with mathematics. (P-PS2-1)
MP.5	Use appropriate tools strategically.(P-PS1-1),(P-PS2-1),(P-PS4-1)
MP.6	Attend to precision. (P-PS2-1)
NY-PK.MD.1	Identify measurable attributes of objects, such as length or weight, and describe them using appropriate vocabulary. (P-PS2-1)
NY-PK.MD.2	Sort objects and shapes into categories; count the objects in each category. 1 (limit category counts to be less than or equal to 10) (P-PS1-1)
NY-PK.G.3	Explore two- and three-dimensional objects and use informal language to describe their similarities, differences, and other attributes. (P-PS1-1)
NY-PK.G.4	Create and build shapes from components (e.g., sticks and clay balls). (P-PS2-1)

*Connection boxes updated as of September 2018

Page 1

*The performance expectations marked with an asterisk integrate traditional science content with engineering through a Practice or Disciplinary Core Idea. The text in the "Disciplinary Core Ideas" section is reproduced verbatim from A Framework for K-12 Science Education: Practices, Cross-Cutting Concepts, and Core Ideas unless it is preceded by (NYSED).

New York State P-12 Science Learning Standards Quick Guide



NYS P-12 Science
LEARNING STANDARDS

New York State P-12 Science Learning Standards Quick Guide

What are the New York State P-12 Science Learning Standards (NYSP12SLS)?

Adapted from the Next Generation Science Standards in 2016, the NYSP12SLS are a series of performance expectations that define what students should understand and be able to do because of their study of science. The NYSP12SLS 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 at http://www.nysed.gov/common/nysed/files/programs/curriculum-instruction/nysscienceintro.pdf.*

Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
⇒ 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. ⇒ Listed below are the eight Science and Engineering practices from the Framework: 1. Asking questions and defining problems 2. Developing and using models 3. Planning and carrying out investigations 4. Analyzing and interpreting data 5. Using mathematics and computational thinking 6. Constructing explanations and designing solutions 7. Engaging in argument from evidence 8. Obtaining, evaluating, and communicating information	⇒ 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. ⇒ 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.	⇒ 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. ⇒ Listed below are the seven Crosscutting Concepts from the Framework: 1. Patterns 2. Cause and Effect 3. Scale, Proportion, and Quantity 4. Systems and System Models 5. Energy and Matter in Systems 6. Structure and Function 7. Stability and Change of Systems

Q&A for Science Educators

Q: When will the New York State P-12 Science Learning Standards (NYSP12SLS) and their corresponding state assessments be implemented? *The implementation timeline can be found at found on the NYSED Science Curriculum and Instruction 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 NYSP12SLS aligned High School course maps for Biology, Earth and Space Sciences, Chemistry, and Physics. Visit http://www.nysed.gov/curriculum-instruction/science-high-school-course-maps to access the High School Course maps in Science.*

Q: Where can I learn more about NYSP12SLS? *You can learn more about the NYS P-12 Science Learning Standards by visiting the NYSED web site. Visit http://www.nysed.gov/curriculum-instruction/science-learning-standards*

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YSP12SLS
e Sciences — PS: Physical Science
the Application of Science
s as seen in the NYSED High School Science Course maps.

ork State P-12 Science Learning Standards.
Learning Standards document for more information.

Learning Standards

Assessment Boundary
Clarifies limitations to large-scale assessments.

Clarification Statement
Provides additional clarification for the performance expectation.

Foundation Boxes
Include pertinent Science and Engineering Practices, Disciplinary Core Ideas, and Crosscutting Concepts to further define the performance expectations. Codes in parentheses designate which of the performance expectations incorporate that practice, idea, or concept.

ons that are different from the Next Generation Science

Make a claim about the merit of a design solution that reduces
e content with engineering through a Practice or Disciplinary

n from A Framework for K-12 Science Education: Practices,
), (i.e. (NYSED) Earth's processes continuously cycle water,

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Frequently Asked Questions about the NYSP12SLS

NYS P-12 Science
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Science and Engineering Practices

⇒ 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.

⇒ Listed below are the eight Science and Engineering practices from the Framework:

1. Asking questions and defining problems
2. Developing and using models
3. Planning and carrying out investigations
4. Analyzing and interpreting data
5. Using mathematics and computational thinking
6. Constructing explanations and designing solutions
7. Engaging in argument from evidence
8. Obtaining, evaluating, and communicating information

Disciplinary Core Ideas

⇒ 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.

⇒ 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.

Crosscutting Concepts

⇒ 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.

⇒ Listed below are the seven Crosscutting Concepts from the Framework:

1. Patterns
2. Cause and Effect
3. Scale, Proportion, and Quantity
4. Systems and System Models
5. Energy and Matter in Systems
6. Structure and Function
7. Stability and Change of Systems

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Q: Where can I learn more about NYSP12SLS? *You can learn more about the NYS P-12 Science Learning Standards by visiting the NYSED web site. Visit http://www.nysed.gov/curriculum-instruction/science-learning-standards*

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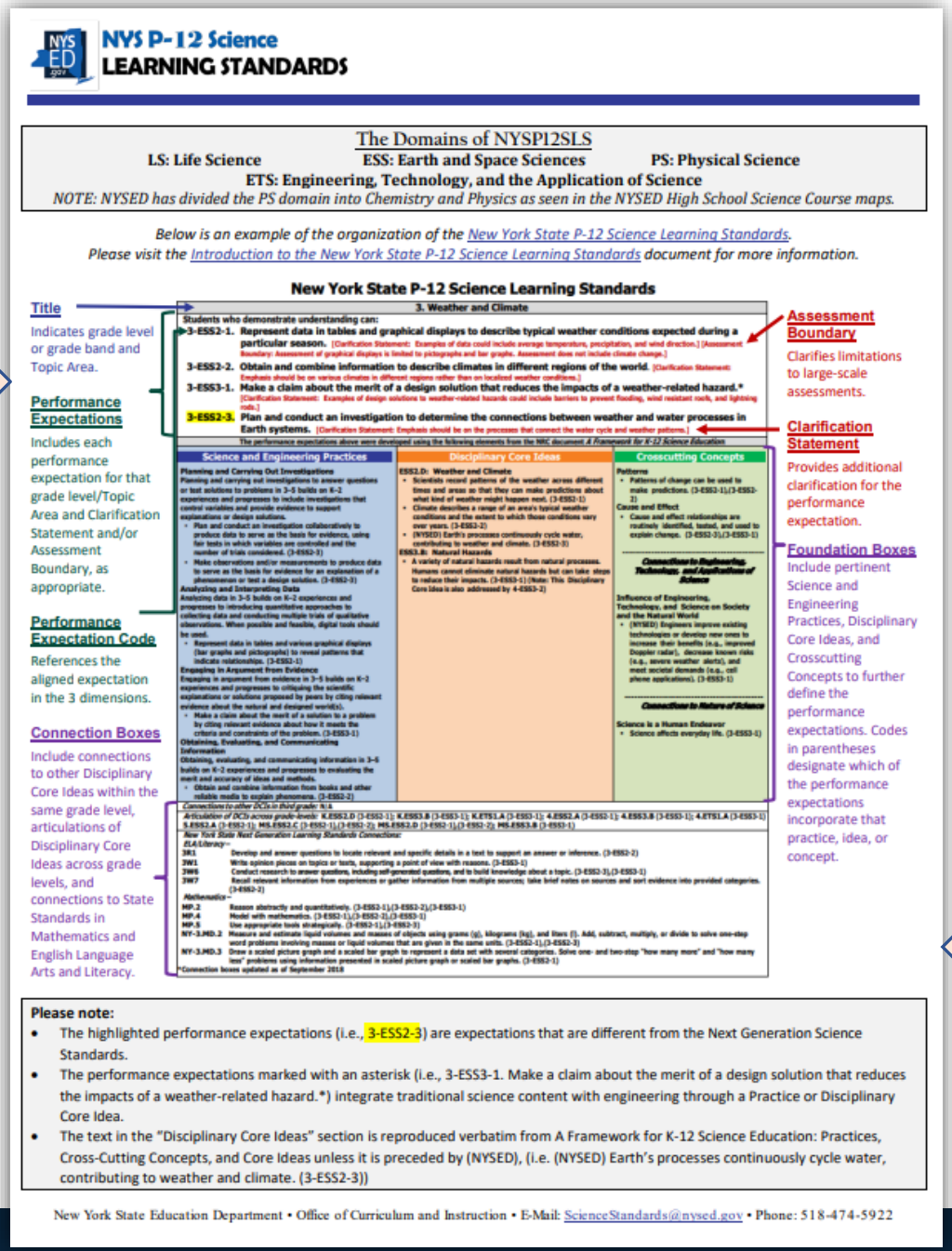
A breakdown of the three dimensions of the NYSP12SLS

Definitions of the structure of the standards are provided.



NYS P-12 Science
LEARNING STANDARDS

The Domains of NYSP12SLS

LS: Life Science **ESS: Earth and Space Sciences** **PS: Physical Science**

ETS: Engineering, Technology, and the Application of Science

NOTE: NYSED has divided the PS domain into Chemistry and Physics as seen in the NYSED High School Science Course maps.

Below is an example of the organization of the New York State P-12 Science Learning Standards.
Please visit the Introduction to the New York State P-12 Science Learning Standards document for more information.

New York State P-12 Science Learning Standards

Title
Indicates grade level or grade band and Topic Area.

Performance Expectations
Includes each performance expectation for that grade level/Topic Area and Clarification Statement and/or Assessment Boundary, as appropriate.

Performance Expectation Code
References the aligned expectation in the 3 dimensions.

Connection Boxes
Include connections to other Disciplinary Core Ideas within the same grade level, articulations of Disciplinary Core Ideas across grade levels, and connections to State Standards in Mathematics and English Language Arts and Literacy.

Assessment Boundary
Clarifies limitations to large-scale assessments.

Clarification Statement
Provides additional clarification for the performance expectation.

Foundation Boxes
Include pertinent Science and Engineering Practices, Disciplinary Core Ideas, and Crosscutting Concepts to further define the performance expectations. Codes in parentheses designate which of the performance expectations incorporate that practice, idea, or concept.

Please note:

- The highlighted performance expectations (i.e., 3-ESS2-3) are expectations that are different from the Next Generation Science Standards.
- The performance expectations marked with an asterisk (i.e., 3-ESS3-1. Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.*) integrate traditional science content with engineering through a Practice or Disciplinary Core Idea.
- The text in the "Disciplinary Core Ideas" section is reproduced verbatim from A Framework for K-12 Science Education: Practices, Cross-Cutting Concepts, and Core Ideas unless it is preceded by (NYSED), (i.e. (NYSED) Earth's processes continuously cycle water, contributing to weather and climate. (3-ESS2-3))

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Special codes and notations found are defined in one spot.

What is a…

SEP Science and Engineering Practice

The major practices that scientists employ as they investigate and build models and theories about the world. Also, a key set of engineering practices that engineers use as they design and build systems.

DCI Disciplinary Core idea

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.

CCC Crosscutting Concept

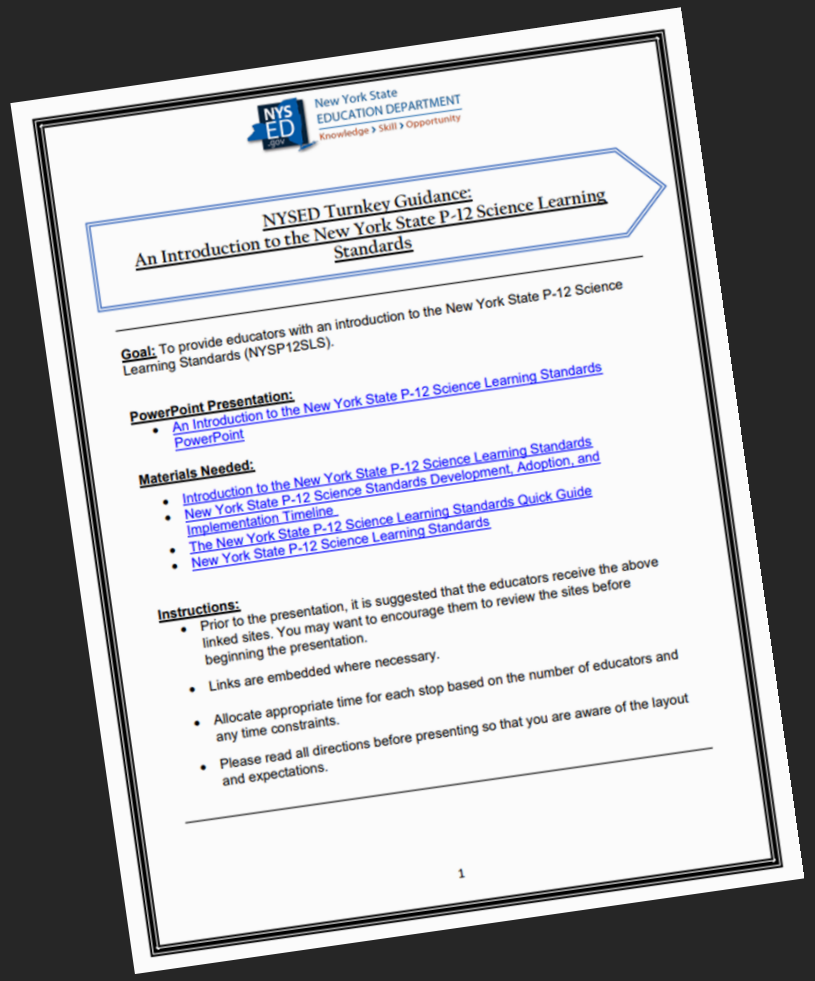
Give students an organizational structure to understand the world and help students make sense of and connect Core Ideas across disciplines and grade bands.

Science Professional Learning Turnkey Guides

The science professional learning turnkey guides provide educators, administrators, and science stakeholder groups with guidance and resources that will direct the work for the implementation the New York State P-12 Science Learning Standards (NYSP12SLS) in New York State classrooms. Each guide provides an optional presentation, instructional steps, and guidance so educators and administrators may facilitate training on various aspects of the New York State P-12 Science Learning Standards within their own professional communities.

- An Introduction to the New York State P-12 Science Learning Standards
  - Turnkey Guide for *An Introduction to the New York State P-12 Science Learning Standards*
  - *An Introduction to the New York State P-12 Science Learning Standards* (Optional PowerPoint Presentation)
- An Introduction to the NYSED Science Page and Resources
  - Turnkey Guide for *An Introduction to the NYSED Science Page and Resources*
  - *An Introduction to the NYSED Science Page and Resources* (Optional PowerPoint Presentation)
- An Introduction to the Integrating Science and Language for All Students with a Focus on English Language Learners Series
  - Turnkey Guide for *An Introduction to the Integrating Science and Language for All Students with a Focus on English Language Learners Series*
  - Introduction Webinar - *Integrating Science and Language for All Students with a Focus on English Language Learners*

Questions pertaining to the implementation of the New York State P-12 Science Learning Standards may be directed to the Office of Curriculum and Instruction via email to ScienceStandards@nysed.gov or via telephone to (518) 474-5922.



NYSED Turnkey Guidance:
An Introduction to the New York State P-12 Science Learning Standards

Goal: To provide educators with an introduction to the New York State P-12 Science Learning Standards (NYSP12SLS).

PowerPoint Presentation:
- An Introduction to the New York State P-12 Science Learning Standards PowerPoint

Materials Needed:
- Introduction to the New York State P-12 Science Learning Standards
- New York State P-12 Science Standards Development, Adoption, and Implementation Timeline
- The New York State P-12 Science Learning Standards Quick Guide
- New York State P-12 Science Learning Standards

Instructions:
- Prior to the presentation, it is suggested that the educators receive the above linked sites. You may want to encourage them to review the sites before beginning the presentation.
- Links are embedded where necessary.
- Allocate appropriate time for each stop based on the number of educators and any time constraints.
- Please read all directions before presenting so that you are aware of the layout and expectations.

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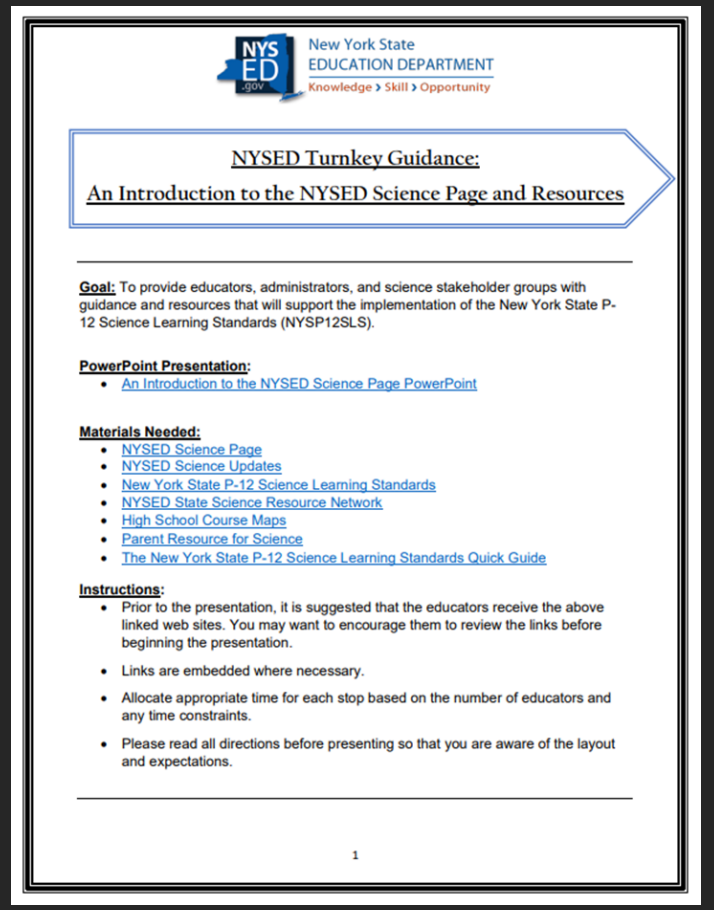

NYSED Turnkey Guidance:
An Introduction to the NYSED Science Page and Resources

Goal: To provide educators, administrators, and science stakeholder groups with guidance and resources that will support the implementation of the New York State P-12 Science Learning Standards (NYSP12SLS).

PowerPoint Presentation:
- An Introduction to the NYSED Science Page PowerPoint

Materials Needed:
- NYSED Science Page
- NYSED Science Updates
- New York State P-12 Science Learning Standards
- NYSED State Science Resource Network
- High School Course Maps
- Parent Resource for Science
- The New York State P-12 Science Learning Standards Quick Guide

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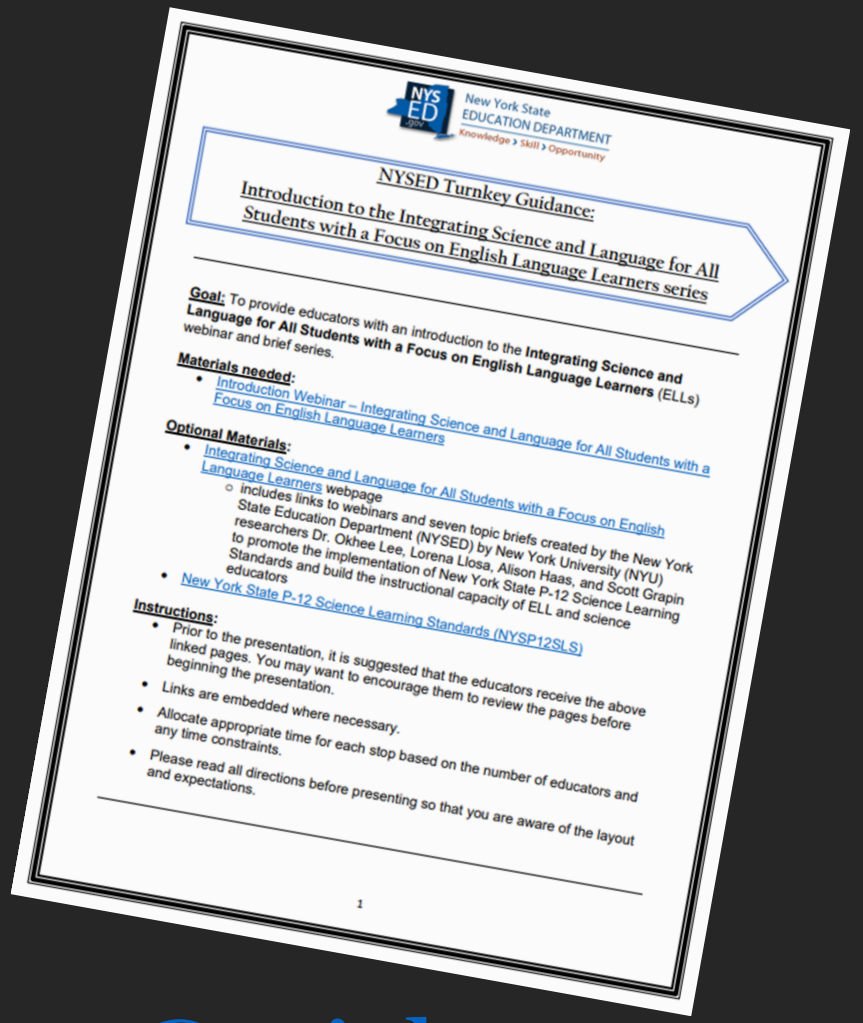

NYSED Turnkey Guidance:
Introduction to the Integrating Science and Language for All Students with a Focus on English Language Learners series

Goal: To provide educators with an introduction to the **Integrating Science and Language for All Students with a Focus on English Language Learners** (ELLs) webinar and brief series.

Materials needed:
- Introduction Webinar – Integrating Science and Language for All Students with a Focus on English Language Learners

Optional Materials:
- Integrating Science and Language for All Students with a Focus on English Language Learners webpage
  - includes links to webinars and seven topic briefs created by the New York State Education Department (NYSED) by New York University (NYU) researchers Dr. Okhee Lee, Lorena Llosa, Alison Haas, and Scott Grapin to promote the implementation of New York State P-12 Science Learning Standards and build the instructional capacity of ELL and science educators
- New York State P-12 Science Learning Standards (NYSP12SLS)

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New Science Turnkey Guides

New York State EDUCATION DEPARTMENT
Knowledge › Skill › Opportunity

NYSED Turnkey Guidance: An Introduction to the New York State P-12 Science Learning Standards

Goal: To provide educators with an introduction to the New York State P-12 Science Learning Standards (NYSP12SLS).

PowerPoint Presentation:

- An Introduction to the New York State P-12 Science Learning Standards PowerPoint

Materials Needed:

- Introduction to the New York State P-12 Science Learning Standards
- New York State P-12 Science Standards Development, Adoption, and Implementation Timeline
- The New York State P-12 Science Learning Standards Quick Guide
- New York State P-12 Science Learning Standards

Instructions:

- Prior to the presentation, it is suggested that the educators receive the above linked sites. You may want to encourage them to review the sites before beginning the presentation.
- Links are embedded where necessary.
- Allocate appropriate time for each stop based on the number of educators and any time constraints.
- Please read all directions before presenting so that you are aware of the layout and expectations.

An Introduction to the New York State P-12 Science Learning Standards

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NYSED Turnkey Guidance:

An Introduction to the NYSED Science Page and Resources

Goal: To provide educators, administrators, and science stakeholder groups with guidance and resources that will support the implementation of the New York State P-12 Science Learning Standards (NYSP12SLS).

PowerPoint Presentation:

- An Introduction to the NYSED Science Page PowerPoint

Materials Needed:

- NYSED Science Page
- NYSED Science Updates
- New York State P-12 Science Learning Standards
- NYSED State Science Resource Network
- High School Course Maps
- Parent Resource for Science
- The New York State P-12 Science Learning Standards Quick Guide

Instructions:

- Prior to the presentation, it is suggested that the educators receive the above linked web sites. You may want to encourage them to review the links before beginning the presentation.
- Links are embedded where necessary.
- Allocate appropriate time for each stop based on the number of educators and any time constraints.
- Please read all directions before presenting so that you are aware of the layout and expectations.

An Introduction to the Office of Curriculum and Instruction Science Page

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NYSED Turnkey Guidance:

Introduction to the Integrating Science and Language for All Students with a Focus on English Language Learners series

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Goal: To provide educators with an introduction to the **Integrating Science and Language for All Students with a Focus on English Language Learners** (ELLs) webinar and brief series.

Materials needed:

- Introduction Webinar – Integrating Science and Language for All Students with a Focus on English Language Learners

Optional Materials:

- Integrating Science and Language for All Students with a Focus on English Language Learners webpage
  - includes links to webinars and seven topic briefs created by the New York State Education Department (NYSED) by New York University (NYU) researchers Dr. Okhee Lee, Lorena Llosa, Alison Haas, and Scott Grapin to promote the implementation of New York State P-12 Science Learning Standards and build the instructional capacity of ELL and science educators
- New York State P-12 Science Learning Standards (NYSP12SLS)

Instructions:

- Prior to the presentation, it is suggested that the educators receive the above linked pages. You may want to encourage them to review the pages before beginning the presentation.
- Links are embedded where necessary.
- Allocate appropriate time for each stop based on the number of educators and any time constraints.
- Please read all directions before presenting so that you are aware of the layout and expectations.

INTEGRATING SCIENCE AND LANGUAGE FOR ALL STUDENTS WITH A FOCUS ON ENGLISH LANGUAGE LEARNERS:
INTRODUCTION TO WEBINAR AND BRIEF SERIES

OKHEE LEE | NEW YORK UNIVERSITY
IN COOPERATION WITH
NYS EDUCATION DEPARTMENT OFFICE OF BILINGUAL EDUCATION AND WORLD LANGUAGES
NYS EDUCATION DEPARTMENT OFFICE OF CURRICULUM AND INSTRUCTION

New York State EDUCATION DEPARTMENT
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A Parent's Guide to the New York State P-12 Learning Standards

New York State
EDUCATION DEPARTMENT
Knowledge › Skill › Opportunity

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.

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

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.

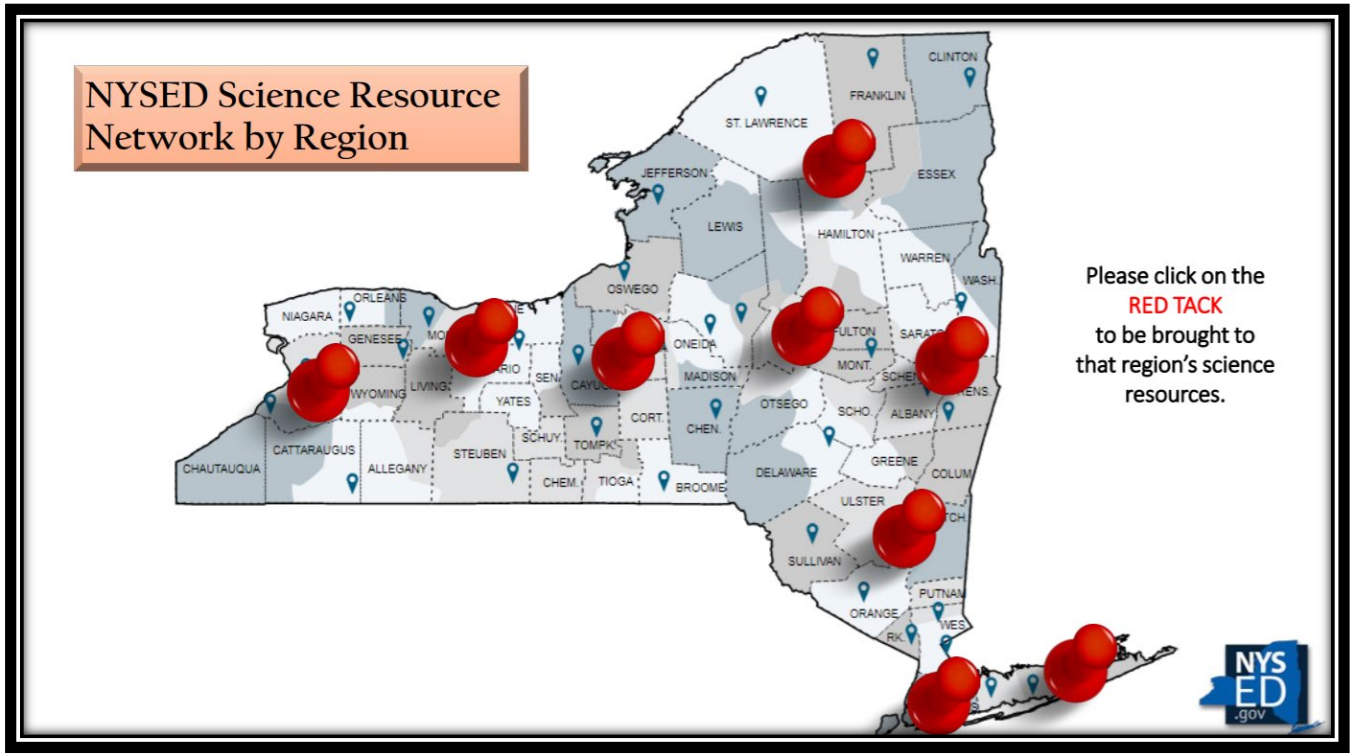
How can I learn more?

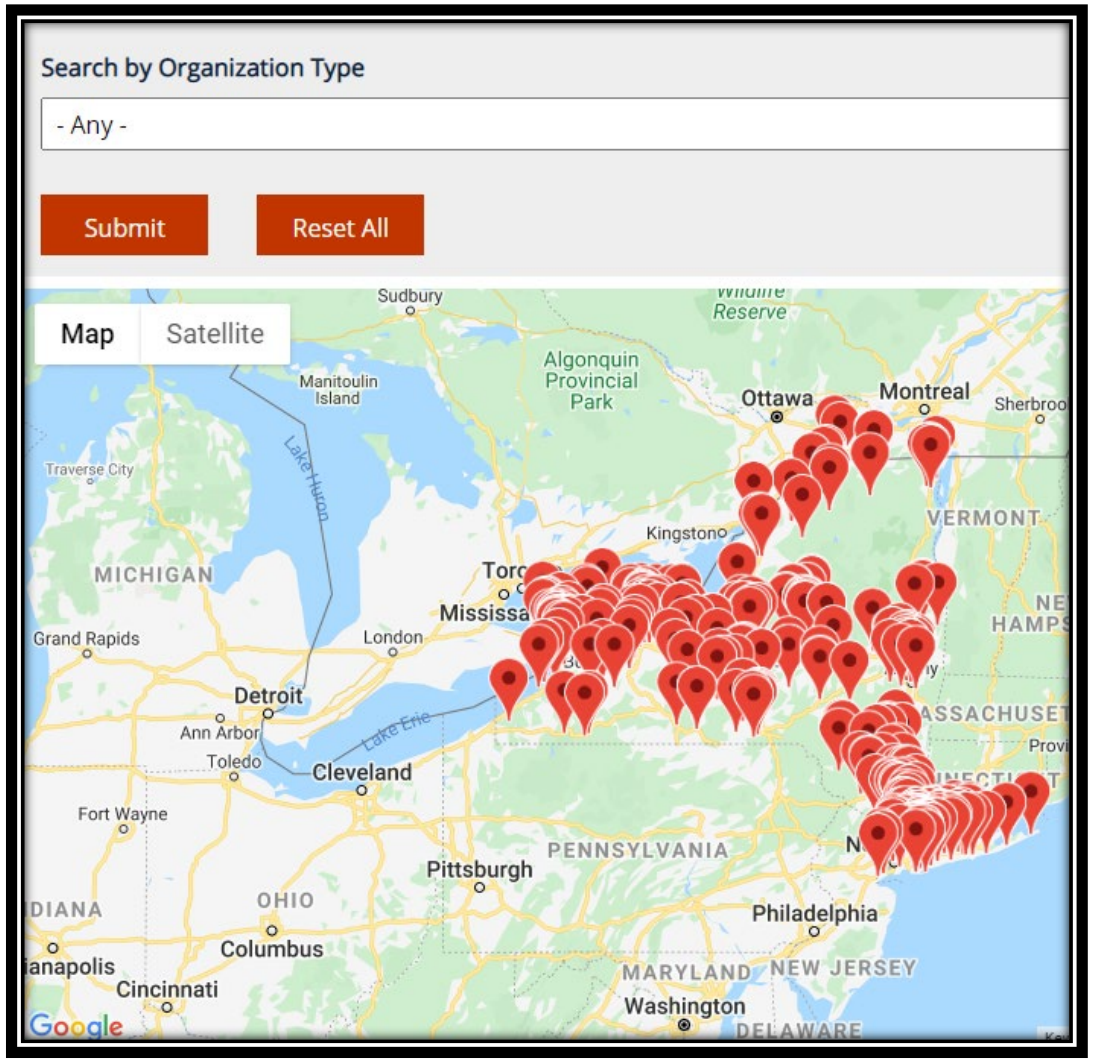
You can learn more about the NYS P-12 Science Learning Standards by talking to your child's teacher or visiting our NYSED web site.

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

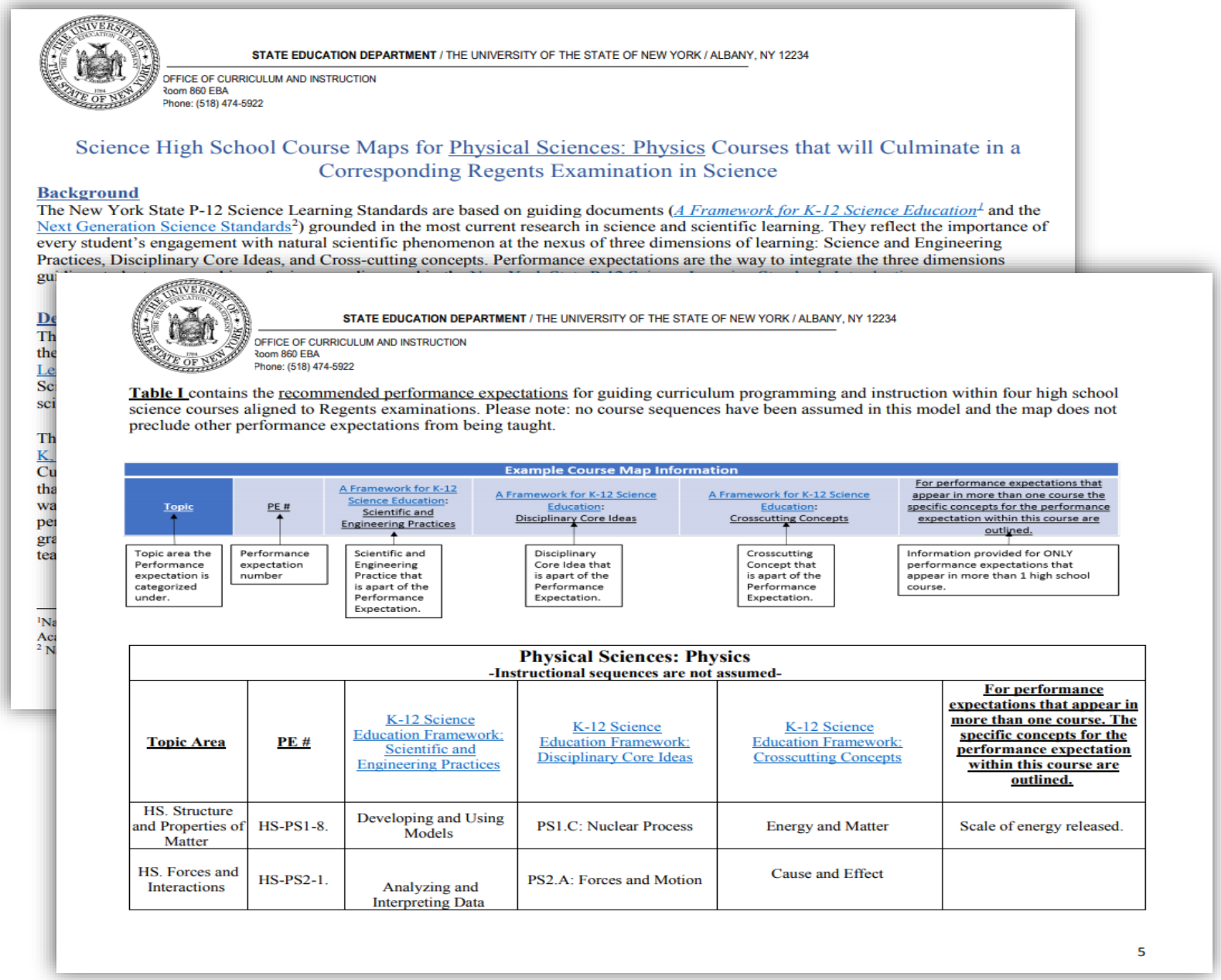




NYSED Statewide Science Resource Network

SCIENCE
High School Course Maps

- Aligned to new Regents examinations in science
- Aligned to the New York State P-12 Science Learning Standards
- Includes:
  - 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*[1] and the Next Generation Science Standards[2]) 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

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Table I 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	

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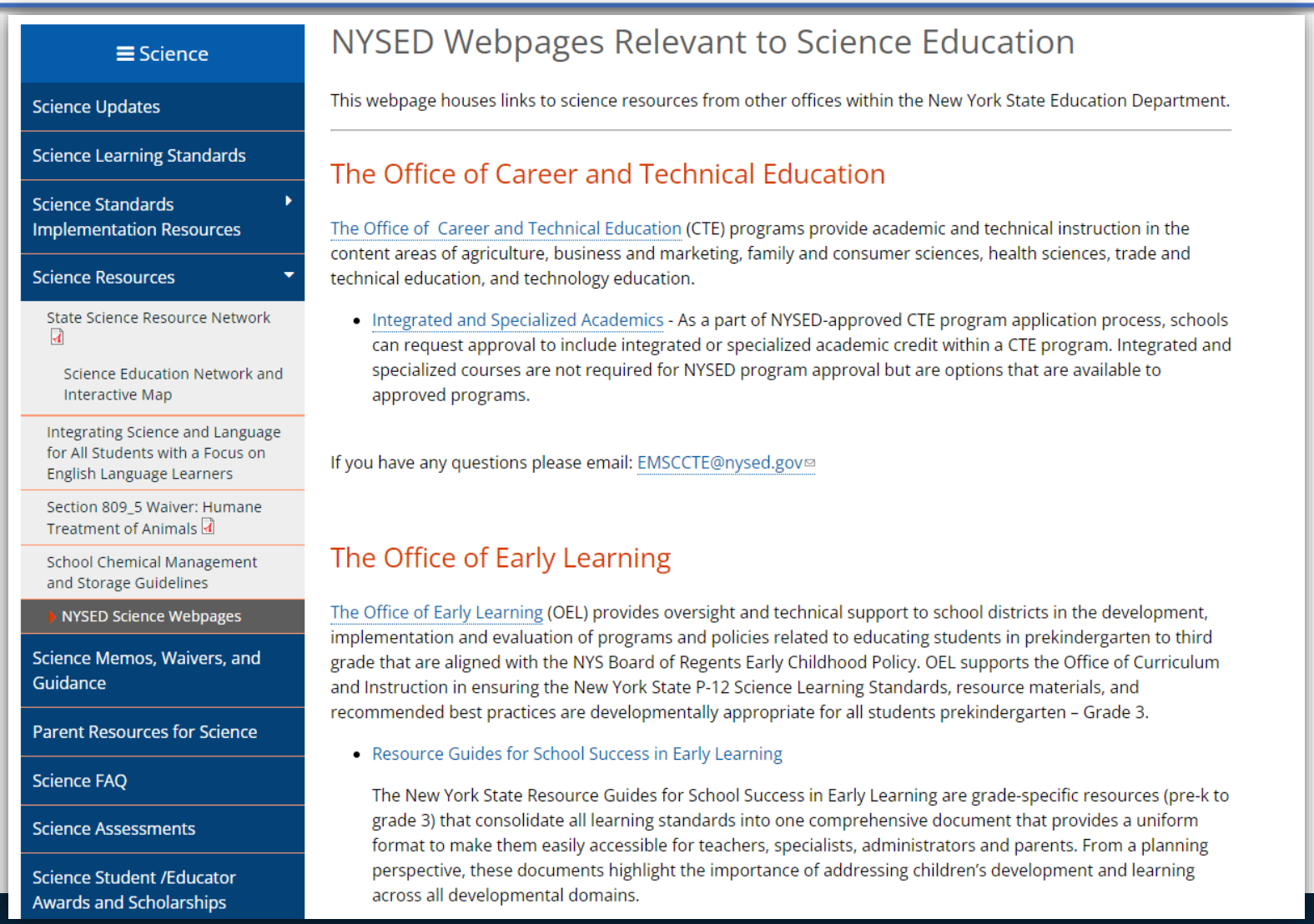
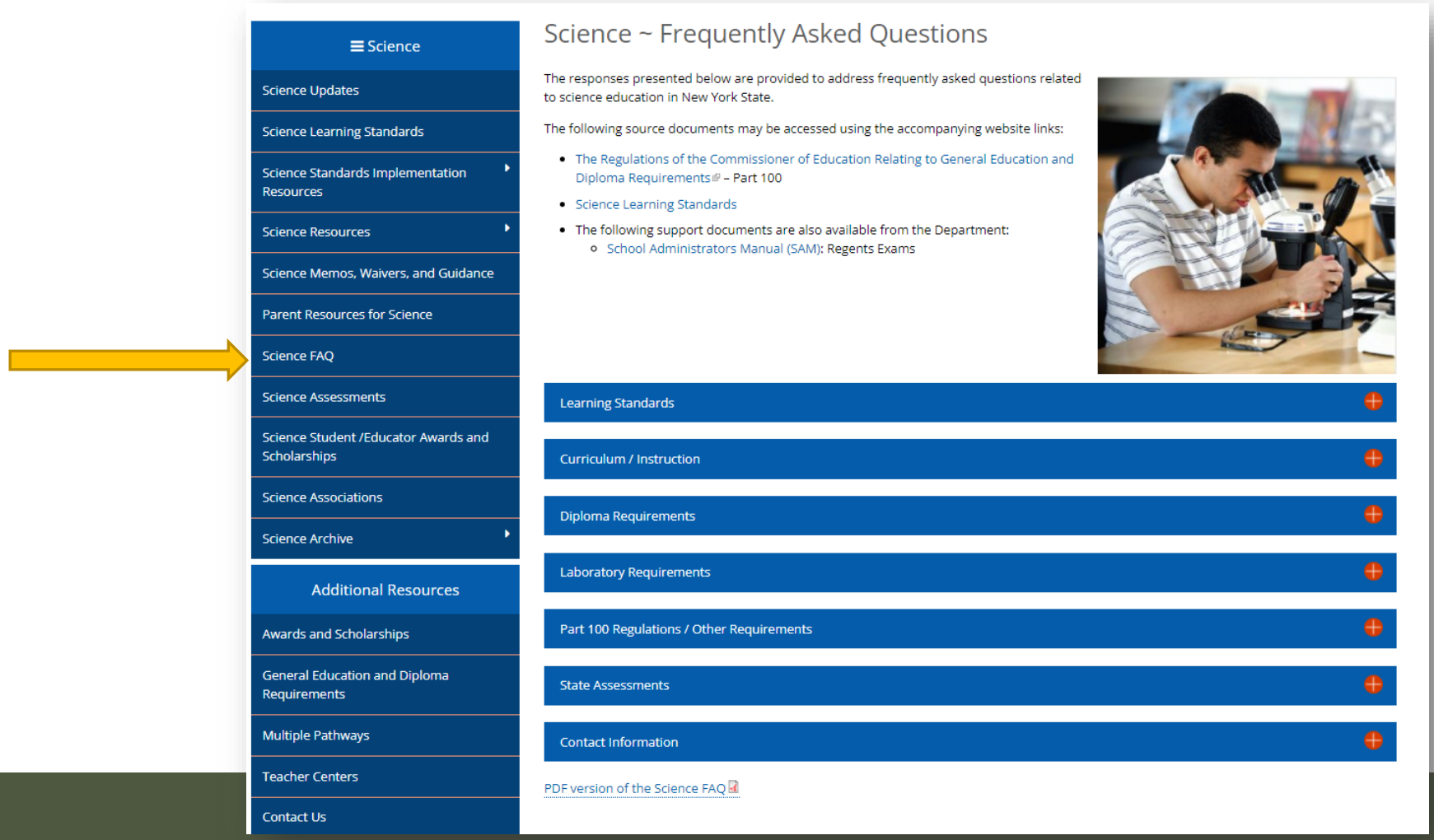
NYSED Webpages Relevant To Science Education





NYSED Science Frequently Asked Questions

Please visit the updated

NYSED Science Frequently Asked Questions page at

http://www.nysed.gov/curriculum-instruction/science-frequently-asked-questions

Collaborative Partners

New York State Teacher Centers

S/CDN Science Statewide Framework Group

New York State Science Education Consortium

Collaborative Partners

NYSED SCAP

Science Content Advisor Panel

BIG 5

STANYS

PAEMST

2022-2023 PAEMST Award Cycle
7-12th grade educators

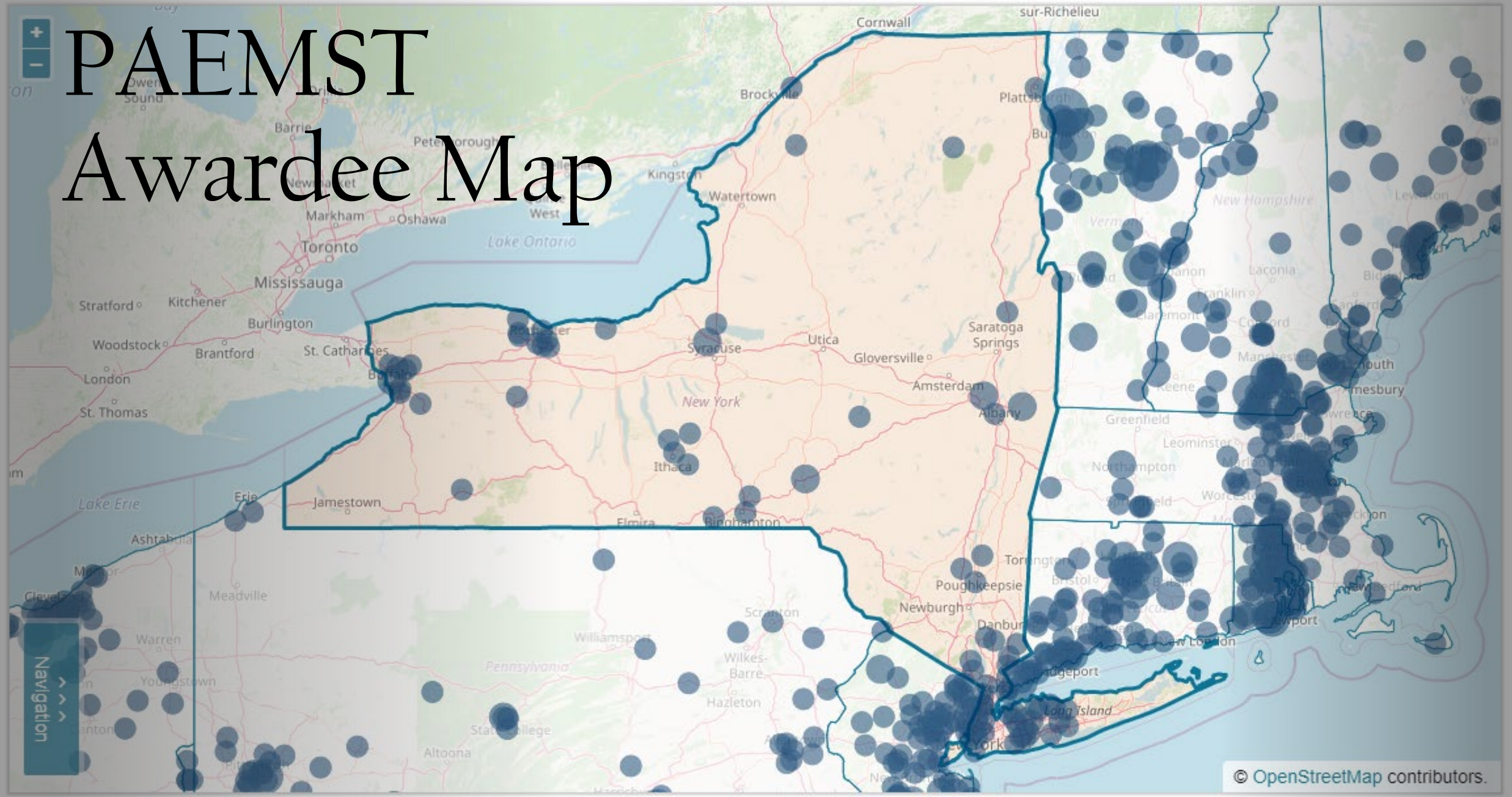
Nominations open:
Fall 2022

The Nation's Highest Honors for Teachers of Science, Technology, Engineering, and Mathematics (STEM, including Computer Science)

Please visit www.paemst.org for more information.

New York | - Filter by Expertise - | - Filter by Grade Range - | - Filter by Award Year - | Clear Filters

PAEMST Awardee Map

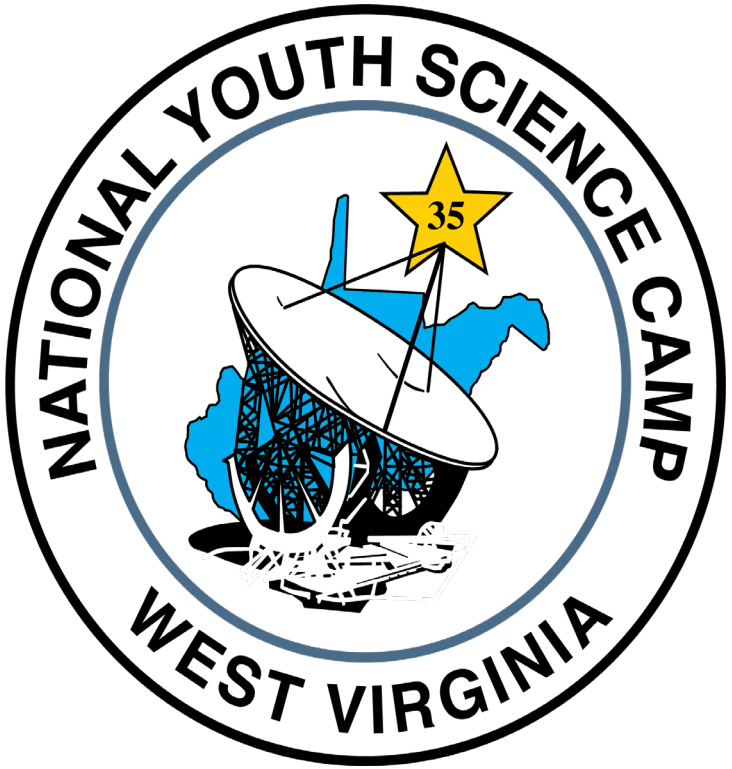


PAEMST ANNOUNCEMENT

NEW YORK 2021
Presidential Award for Excellence in Math and Science Teaching
State Finalists

- Kristen Drury
- Dr. Sarah English
- Dr. Brittany Kozlenko

National Youth Science Camp



The National Youth Science Camp (NYSCamp) is a residential science education program for young STEM enthusiasts the summer after they graduate from high school.

To be selected, you must be a graduating high school senior in the United States (Two each from every state and Washington, D.C.) and students 16-18 years of age in selected other countries.

Students who are selected will attend the NYSCamp FREE of charge.

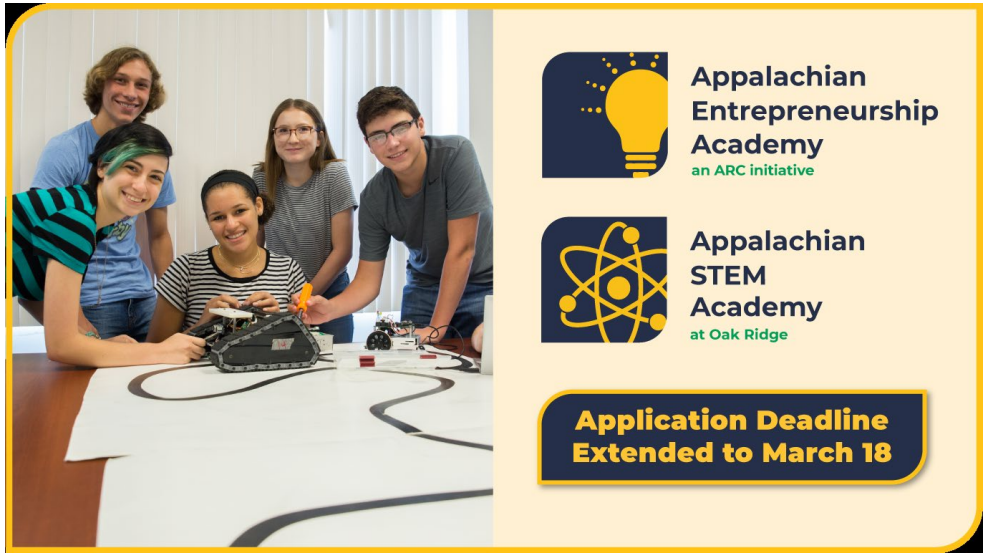
The 2022 NYSCamp will be held in Summer 2022; **the selected must be able to attend the entire program - no exceptions.**

Application deadline is March 31st, 2022.

For more information about the program, please visit the NYSCamp's web site at http://www.nyscamp.org or our NYSED Science Award and Scholarships page.

Appalachian STEM Academy

The Appalachian Regional Commission (ARC), in collaboration with the Oak Ridge National Laboratory (ORNL), is sponsoring a two-week residential hands-on learning institute focusing on math, science, and technology for high school students and teachers, and middle school students.

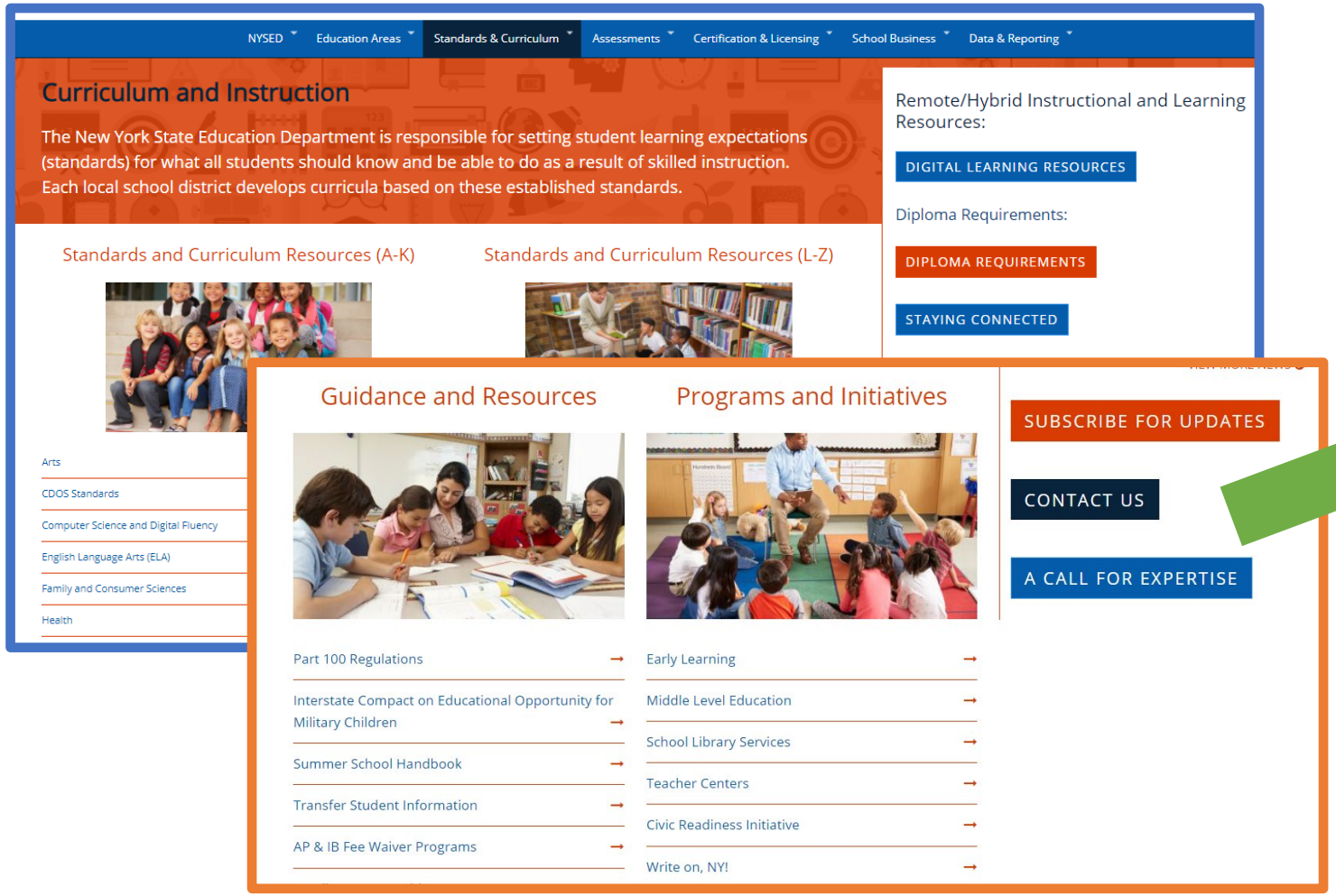


Opportunities include:

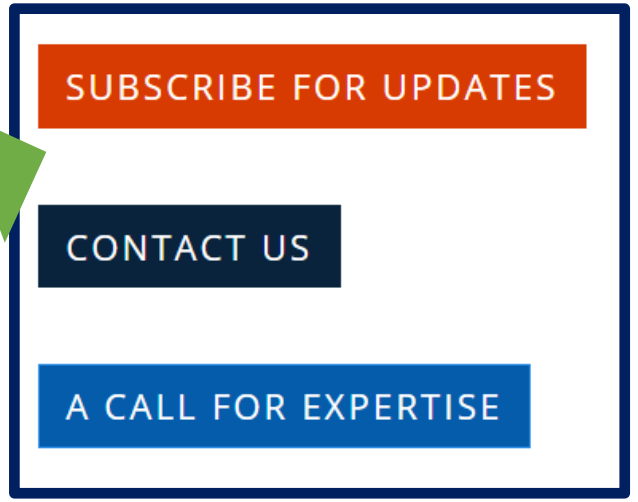
- **High School Summer Math-Science-Technology Institute** for high school students and teachers.
- **Middle School Summer Science Academy** for middle school students.

Additional information is available on the ARC/ORNL web site and or our NYSED Science Awards and Scholarships page.

NYSED Office of Curriculum and Instruction



NYSED Office of Curriculum and Instruction



Content Area Notification Service

Join our Notification Service for news and updates from the Office of Curriculum and Instruction.

- Administrators
- Arts
- CTE
- Computer Science
- ELA
- Health
- Math
- Middle Level
- N-6
- Physical Education
- School Counselors
- School Library
- Science
- Social Studies
- World Languages

Update from the Office of State Assessment

New York State
EDUCATION DEPARTMENT
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SCIENCE LABORATORY EXPERIENCE & REQUIREMENTS

Laboratory experiences are a vital component of any science course.

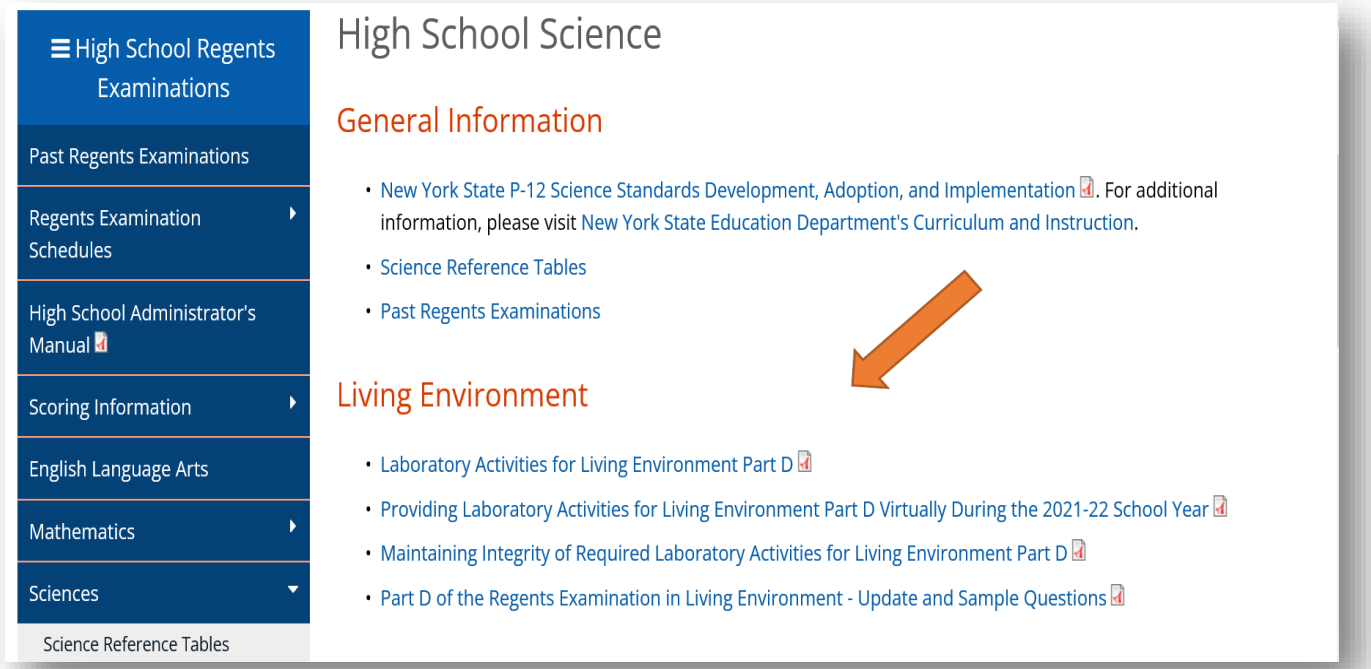
Students must be prepared for the performance components of the Regents Examinations in science.

- At this time, the four required labs for LE must still be incorporated into the curriculum. These labs cannot be replaced or substituted by another laboratory activity.

In August of 2021, NYSED released a memo entitled **Virtual Laboratory Experiences and the 1,200 Minute Science Laboratory Requirement for the 2021-22 School Year.** This memo provides guidance on the permissibility of virtual laboratory experiences and the 1,200 laboratory minutes requirement for the upcoming 2021-22 school year.

- In the 2021-2022 school year, students are expected to meet the 1,200-minute laboratory requirement, however, the Board of Regents has extended the decision that the 1,200-minute laboratory requirement may be met through a combination of hands-on and simulated laboratory experiences where “such hands-on laboratory experience cannot be met as a result of the COVID-19 crisis”.

Providing Laboratory Activities for Living Environment Part D Virtually During the 2021-22 School Year



- Permission is hereby granted to reproduce, electronically (i.e., scanned) if necessary, the Student Laboratory Packet and the Student Answer Packet in limited quantities for local use in instruction.
- The Teacher's Guides are not to be provided to students and should not be reproduced electronically or shared virtually.

High School Science General Info

LE Part D Virtual Memo 2021-2022

Regents Examination Schedule for June 2022

WEDNESDAY, June 1	WEDNESDAY, June 15	THURSDAY, June 16	FRIDAY, June 17	MONDAY, June 20	TUESDAY, June 21	WEDNESDAY, June 22	THURSDAY, June 23	FRIDAY, June 24
9:15 a.m.	**9:15 a.m.**	**9:15 a.m.**	**9:15 a.m.**		**9:15 a.m.**	**9:15 a.m.**	**9:15 a.m.**	
U.S. History and Government (Framework)*	English Language Arts	Algebra I	Global History and Geography II	**Juneteenth Holiday Observed**	Geometry World Language Assessment suggested date/time: Locally developed Checkpoint A Exams	Algebra II	Physical Setting/Physics	**RATING DAY**
	1:15 p.m.	**1:15 p.m.**	**1:15 p.m.**		World Language Assessment suggested date/time: Locally developed Checkpoint B Exams	**Uniform Admission Deadline** Morning Examinations: 10:00 a.m. Afternoon Examinations: 2:00 p.m.		
	Living Environment	Physical Setting/Chemistry	Physical Setting/Earth Science					

Regents Examination Schedules for January, June, & August 2022

Regents Examination Schedule for August 2022

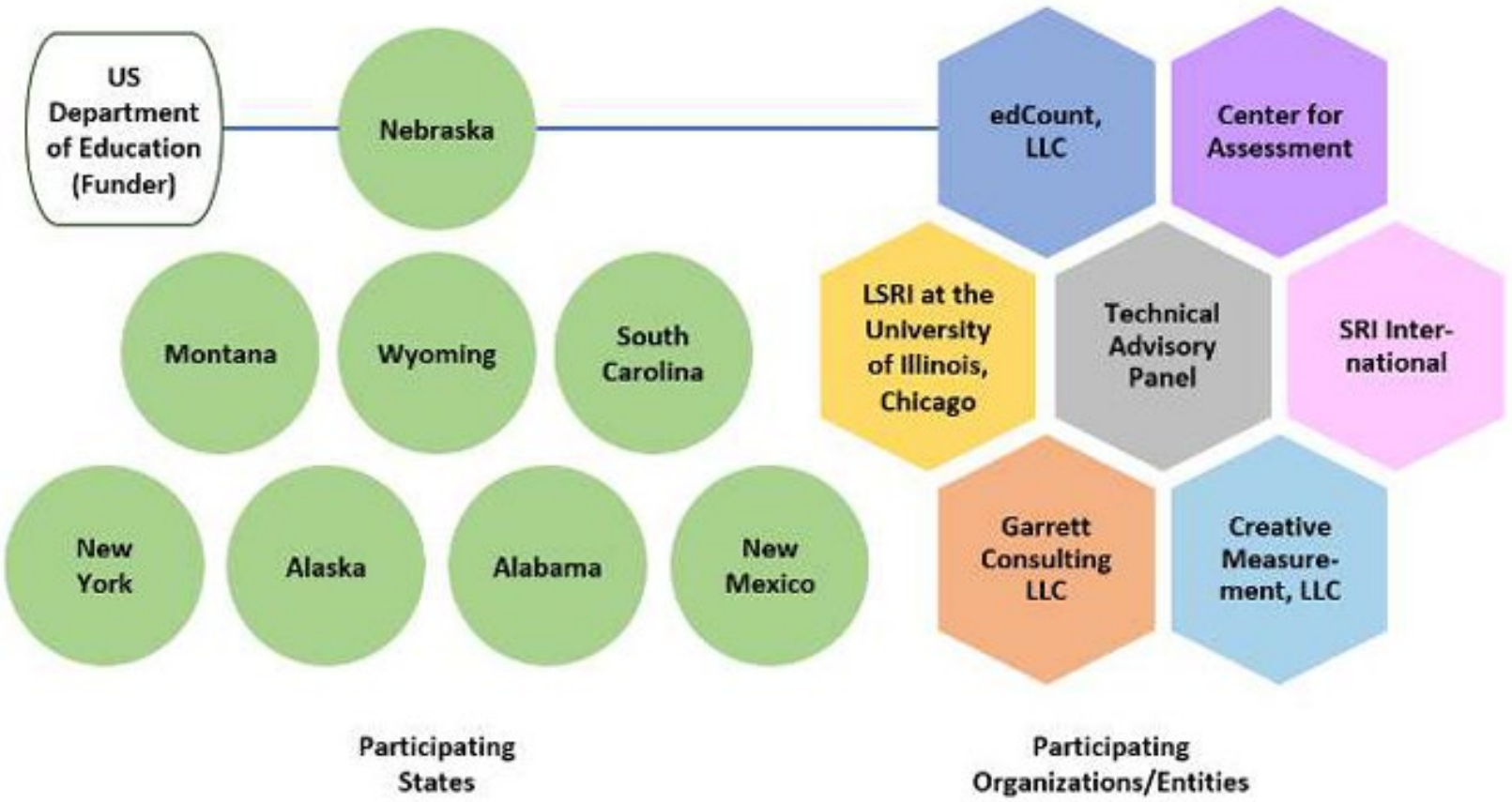
TUESDAY, August 16	WEDNESDAY, August 17
8:30 a.m.	**8:30 a.m.**
Algebra I English Language Arts	U.S. History and Government (Framework) Physical Setting/Earth Science Physical Setting/Chemistry
12:30 p.m.	**12:30 p.m.**
Global History and Geography II Algebra II	Geometry Living Environment

Regents Examination Schedules for January, June, & August 2022

New Assessments

Spring 2024	Elementary Level Science Test Intermediate Level Science Test
June 2025	Regents Exam in Earth & Space Sciences Regents Exam in Biology
June 2026	Regents Exam in Chemistry Regents Exam in Physics

Updated (April 2021) Assessment Time-Line for NYS P-12 Science Learning Standards



Stackable, Instructionally-Embedded, Portable Science (SIPS) Assessments

Educator Opportunities

Information about opportunities to participate in test development can be found at:

NEW YORK STATE EDUCATION DEPARTMENT TEACHER PARTICIPATION OPPORTUNITIES

Update from the Office of Career and Technical Education

New York State
EDUCATION DEPARTMENT
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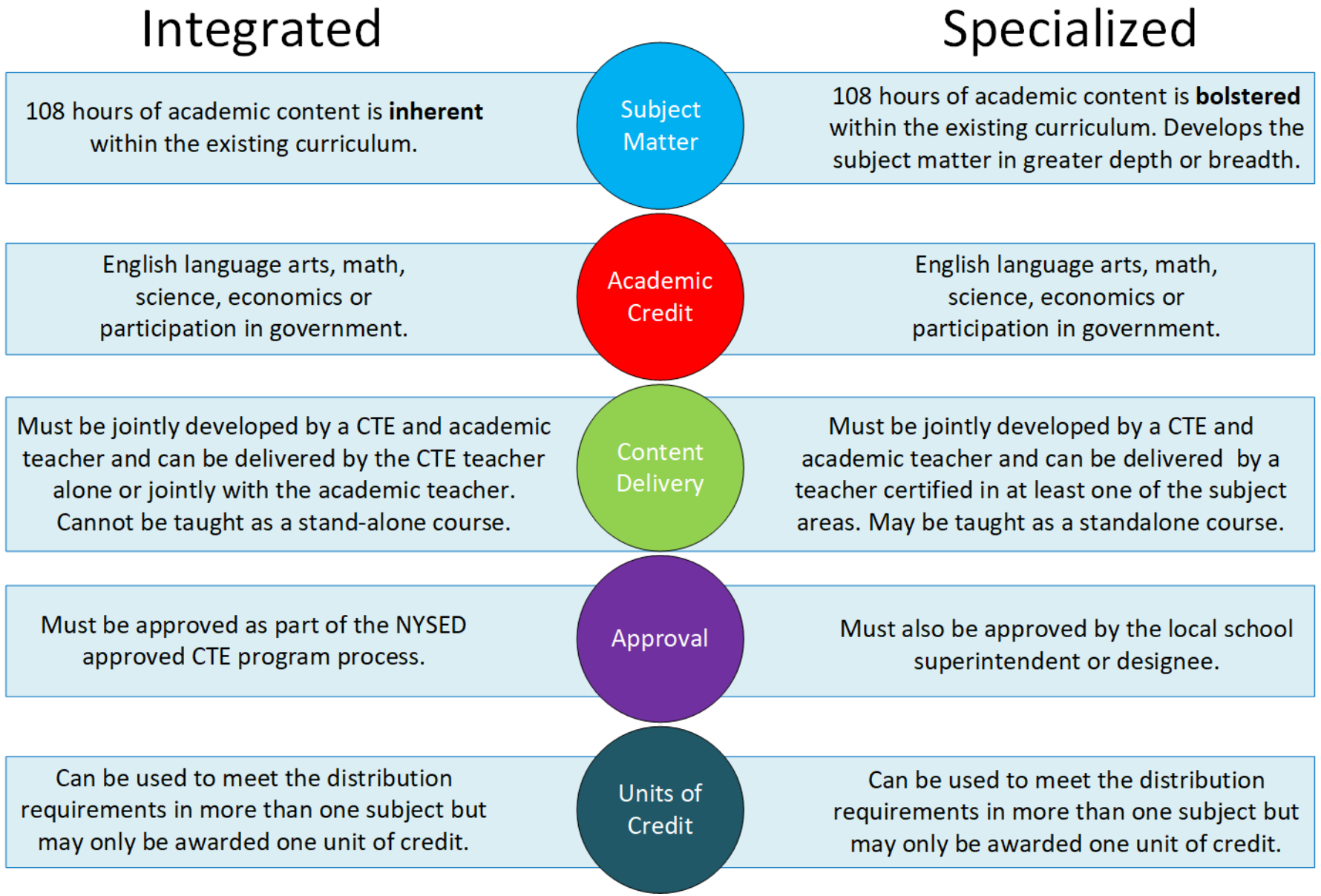
Integrated
Specialized
108 hours of academic content is **inherent** within the existing curriculum.
Subject Matter
108 hours of academic content is **bolstered** within the existing curriculum. Develops the subject matter in greater depth or breadth.
English language arts, math, science, economics or participation in government.
Academic Credit
English language arts, math, science, economics or participation in government.
Must be jointly developed by a CTE and academic teacher and can be delivered by the CTE teacher alone or jointly with the academic teacher. Cannot be taught as a stand-alone course.
Content Delivery
Must be jointly developed by a CTE and academic teacher and can be delivered by a teacher certified in at least one of the subject areas. May be taught as a standalone course.
Must be approved as part of the NYSED approved CTE program process.
Approval
Must also be approved by the local school superintendent or designee.
Can be used to meet the distribution requirements in more than one subject but may only be awarded one unit of credit.
Units of Credit
Can be used to meet the distribution requirements in more than one subject but may only be awarded one unit of credit.

Contact Information:

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Office of Career and Technical Education

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Kelsey Roman
Associate in Instructional Services

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Kelsey.Roman@NYSED.gov

Update from the Office of Early Learning

New York State
EDUCATION DEPARTMENT
Knowledge › Skill › Opportunity

Office of Early Learning

Responsibilities

- State-Administered Prekindergarten
  - Allocations & Grants
- Grades K – 3
- Voluntary Registered Nursery Schools and Kindergartens

Services

- Application Reviews
- Technical Assistance
  - On-Site Visits
- Guidance
  - Technical & Fiscal
- Reporting & Data

Resource Guides For School Success In Early Learning

- **Designed in Collaboration with the Office of Curriculum & Instruction**

NYS Science Learning Standards

Title

Performance Expectation

Clarification Statement

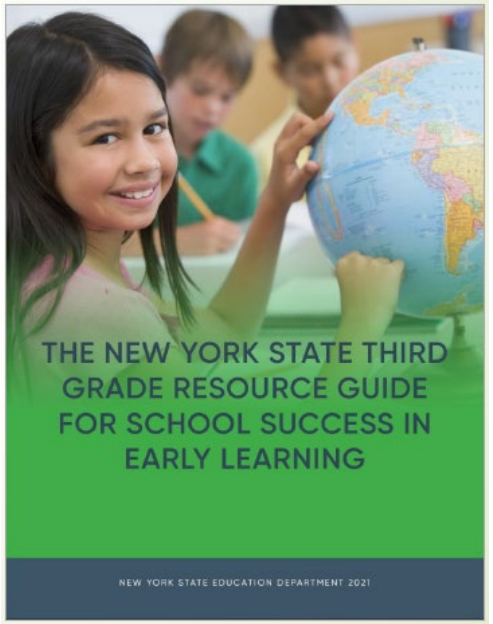
Assessment Boundary

WEATHER AND CLIMATE

3-ESS2-1. Represents data in tables and graphical displays to describe typical weather conditions expected during a particular season.

Clarification Statement: Examples of data could include average temperature, precipitation, and wind direction.

Assessment Boundary: Assessment of graphical displaysis limited to pictographsandbar graphs. Assessment does not include climate change.



Science Resources

- NYS Science Resource Network
- Integrating Science & Language-Topic Briefs
- NYS Science Learning Standards Implementation Roadmap
- Science Standards Parent Flyer
  - Translated into 12 languages

Contact us!

NYSED Curriculum and Instruction Website:
www.nysed.gov/curriculum-instruction

NYSED Science website:
http://www.nysed.gov/curriculum-instruction/science

NYSED Office of Assessment website:
http://www.nysed.gov/state-assessment

Questions pertaining to science curriculum and instruction:
emscurric@nysed.gov

Questions pertaining to science assessment:
emscassessinfo@nysed.gov

Nicole Marschilok
Associate in Instructional Services - Science
Nicole.Marschilok@nysed.gov

Please send question regarding science standards to ScienceStandards@nysed.gov