Shifts to New York State Science Learning Standards

Syosset CSD

January 12, 2026

Preparing students to thrive in both the future we imagine and one which may evolve in ways yet to be envisioned

Syosset CSD Mission

To prepare students to thrive in both the future we imagine and one which may evolve in ways yet to be envisioned.

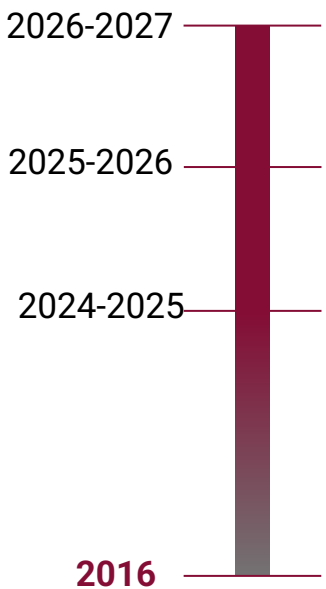
BOE Goal: Academic Excellence

“Design experiences that cultivate collaboration skills”

“Enables all students to discover their greatest potential and be prepared to contribute to their community.”

View Full Syosset Board of Education Goals

Shifting New York State Science Learning Standards And Assessments



2026-2027
Second Administration of the Chemistry and Physics Regents Exams

2025-2026
Second Administration of Earth & Space Science and Biology Regents Exams
First Administration of the Chemistry and Physics Regents Exams

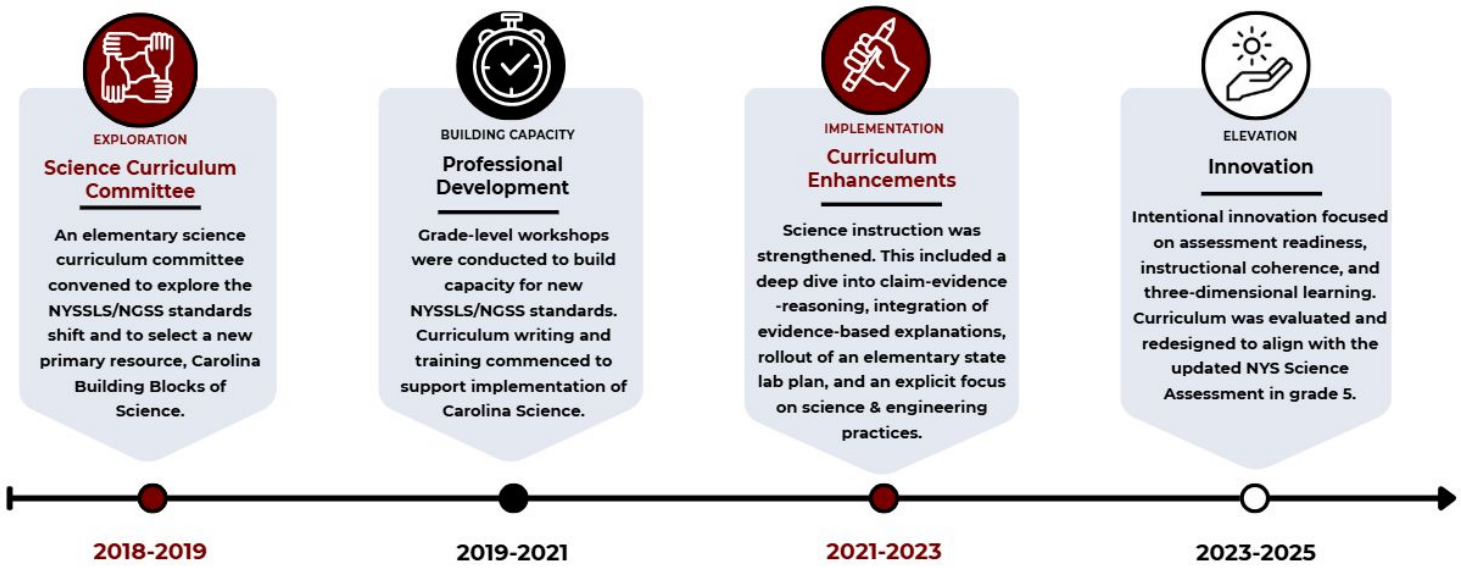
2024-2025
First Administration of the Earth & Space Science and Biology Regents Exams
The Legacy "Old" Regents exams are still administered

2016
NYS Science Learning Standards (NYSSLS) are adopted
Statewide transition to the new standards based on the Next Generation Science Standards (NGSS) begins at the elementary level

***Syosset students will be taking the second administration of the Earth & Space Science, Biology, Chemistry, and Physics Regents Exams**

Building the Foundation: Elementary Shifts Aligned to NYSSLS/NGSS

Elementary science has undergone a multi-year instructional shift aligned to NYSSLS/NGSS, establishing common language, practices, and expectations that students bring with them into secondary science.



By the time students reach the secondary level, they have experienced years of three-dimensional, inquiry-driven science learning aligned to NGSS/NYSSLS expectations.

New York State Science Learning Standards (NYSSLS)
3 Dimensional Teaching & Learning

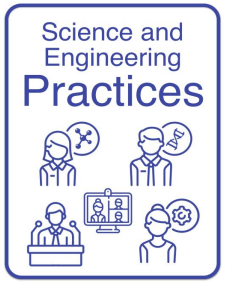
Disciplinary Core Ideas

Life Science

Physical Science

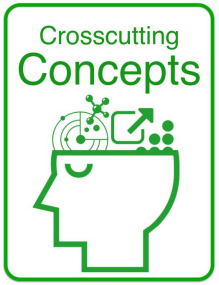
Earth & Space Science

Engineering, Technology & Application of Science



Science & Engineering Practices

1. Asking Questions
2. Developing & Using Models
3. Planning & Carrying Out Investigations
4. Analyzing & Interpreting Data
5. Using Mathematics & Computational Thinking
6. Constructing Explanations
7. Engaging in Argument from Evidence
8. Obtaining, Evaluating, & Communication Information

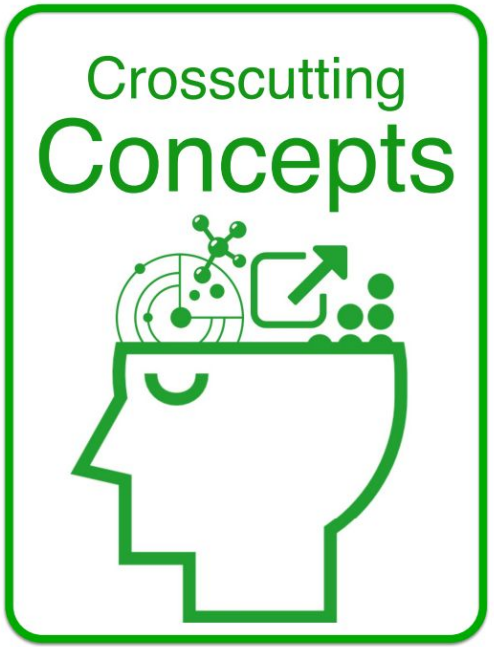


Cross Cutting Concepts

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

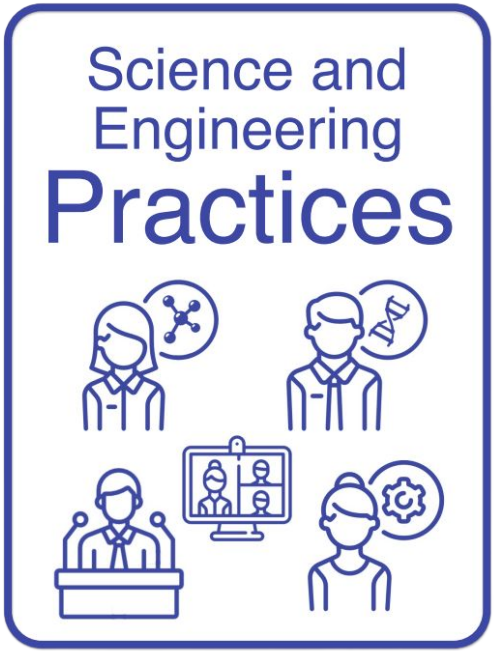
“Energy & Matter: Flow, Cycle, Conservation” Across all Science Disciplines

- In Biology: food chains/webs
- In Chemistry: balancing, conservation of matter
- In Physics: potential to kinetic energy, $E=mc^2$



“Engaging in Argument from Evidence”
Across all Content Areas

- In Science: Claim Evidence Reasoning
- In English: Document Based Questions
- In Social Studies: Document Based Questions
- In Math: Constructing Viable Arguments



NYSED Standards (OLD)

Content Driven
(Lecture/Textbook)

Standardized Labs

Assessment
(One/Two-Dimensional)

NYSSLS Standards (NEW)

Inquiry Driven
(Phenomena & Demonstrations)

Construct Explanations

Assessment
(Three-Dimensional)

Supporting the Transition & Implementation

- Summer Curriculum Writing across all science disciplines at all levels
- Local Conferences (LISTEMLA, LIPTA)
- NYSSLS PLC at the High School
- Monthly Department Meetings
- In-district collaborative sessions with Science teachers
- Professional Learning with external consultants
- Cross-district collaboration with multiple districts
- BOCES training on the new required State investigations across all science disciplines

Shifting NYSSLS Assessments (7th Grade Science)

1-2 Dimensional
Recall of content

3 Dimensional
Properties of Elements vs Compounds
Developing & Using Models
Engaging in Argument from Evidence
Cause & effect
Structure & Function

Old Style Questions:

1. **What** happens when elements chemically combine?
   a) only metals retain their properties
   b) new elements are formed
   c) all elements retain their properties
   d) new properties are formed

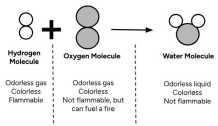
2. **Which of the following** does *not* describe elements?
   a) They can join to form new compounds
   b) They have their own unique properties
   c) They can broken down into simpler substances

New Style Questions:

1. Atoms come in different types, each with unique properties that affect how they interact with other atoms. The properties of the resulting compound are very different from those of the individual atoms, showcasing how the nature of the atoms influences the characteristics of the molecules they form.

How is an element different from a compound? **Draw** an example to support your answer.

2. Below is a reaction that shows how hydrogen and oxygen combine to form water.



Using evidence from the reaction above, e**xplain how this model** shows that the properties of compounds are not the same as the properties of the substances that create them. **Use at least two pieces of evidence.** You may use bullets.

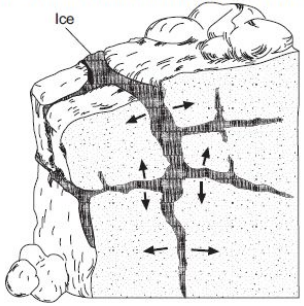
Earth Science

1-2 Dimensional
Physical Weathering
Using Models

Earth & Space Science

3 Dimensional Cluster
Physical Weathering
Developing & Using Models
Constructing Explanations
Cause & effect
Patterns

The diagram below shows granite bedrock with cracks. Water has seeped into the cracks and frozen. The arrows represent the directions in which the cracks have widened due to weathering.



Which statement best describes the physical weathering shown by the diagram?

A) Enlargement of the cracks occurs because water expands when it freezes.
B) This type of weathering occurs only in bedrock composed of granite.
C) The cracks become wider because of chemical reactions between water and the rock.
D) This type of weathering is common in regions of primarily warm and humid climates.

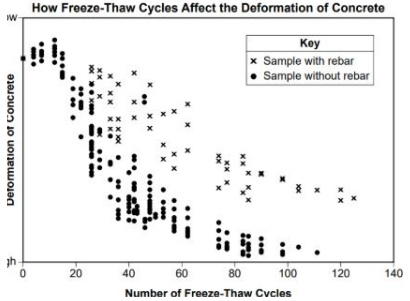
The Power of Water

Water in its many forms is unique to our planet. It is required for life as we know it and it can be used for a wide variety of beneficial purposes such as recreation and generating electricity. However, water can also be destructive and cause problems for humanity.

Concrete is an important building material that can be affected by water.

Concrete Pour With Rebar Structure

An experiment was conducted on samples of concrete, with and without rebar, to see how freeze-thaw cycles affected the deformation of the concrete. The graph shows some information about the freeze-thaw experiment.



Describe a property of water that *increases* the deformation of concrete due to repeated freeze-thaw cycles. Also, describe the relative amount of deformation to concrete samples when metal rebar is added compared to samples without rebar. [1]

Property of water: _____

Relative amount of deformation: _____

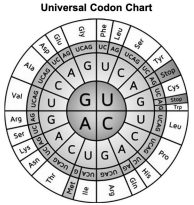
_____

Three Dimensional Biology Lesson

Variation of Traits

“What do you notice and wonder about this image?”

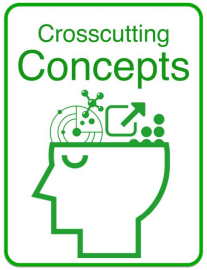
Students generate questions and share hypotheses



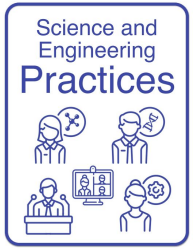
Students analyze and compare DNA sequences, identifying types of mutations

“If you were a cell, what type of mutation would you be most worried about and why?”

DNA Mutations



Cause & Effect



Analyzing & Interpreting Data
Constructing Explanations

Three Dimensional Chemistry Lesson

Forces of Attraction

“Why is beach sand wet?”

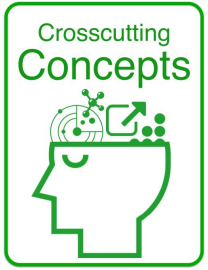
Students explore Magic Sand

(hydrophobic)

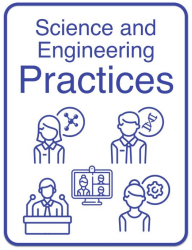
Students develop questions & ideas

Connections are made to real-world applications

Interactions of Matter



Structure & Function
Patterns



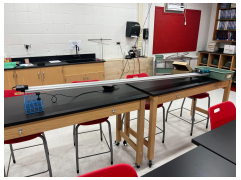
Asking Questions
Constructing Explanations

Three Dimensional Physics Lesson

Impulse and Momentum

How do airbags protect passengers in a collision?

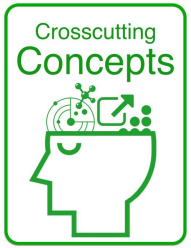
Students develop questions & ideas



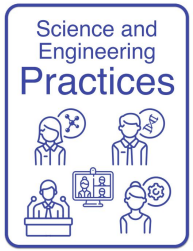
Students design, evaluate, and refine a device to minimize the force during a collision

Students make connections to other applications

Defining & Delimiting Engineering Problems



Cause & Effect



Constructing Explanations and Designing Solutions

New York State Science Learning Standards (NYSSLS)
What Students Are Saying

Shifts to New York State Science Learning Standards

Thank You

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