



Science & Social Studies Update

*Board of Education Meeting
February 9, 2023*



Inquiry-Based Instruction

- **Inquiry** is at the heart of science and social studies instruction.
- Inquiry-based instruction requires students to inquire, think critically, solve problems, and communicate.
- Students investigate essential questions, big ideas, and the world around them through a series of inquiry-based, exploratory learning experiences.
- The inquiry process provides opportunities for students to build on their experiences, apply their skills, and express their knowledge and ideas—these are *habits of lifelong learners*.



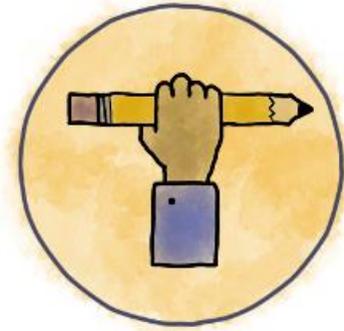
Three Important Shifts to Inquiry-Based Instruction



From Record-Keeping to
INVESTIGATION



From Single to
VARIED SOURCES



From Recall
TO IMPACT

Interdisciplinary Connections

Connecting students to the world around them

- Language Arts
 - Reading standards for informational texts
 - Writing standards, specifically information and argument writing
 - Speaking and listening standards
- Mathematical Reasoning



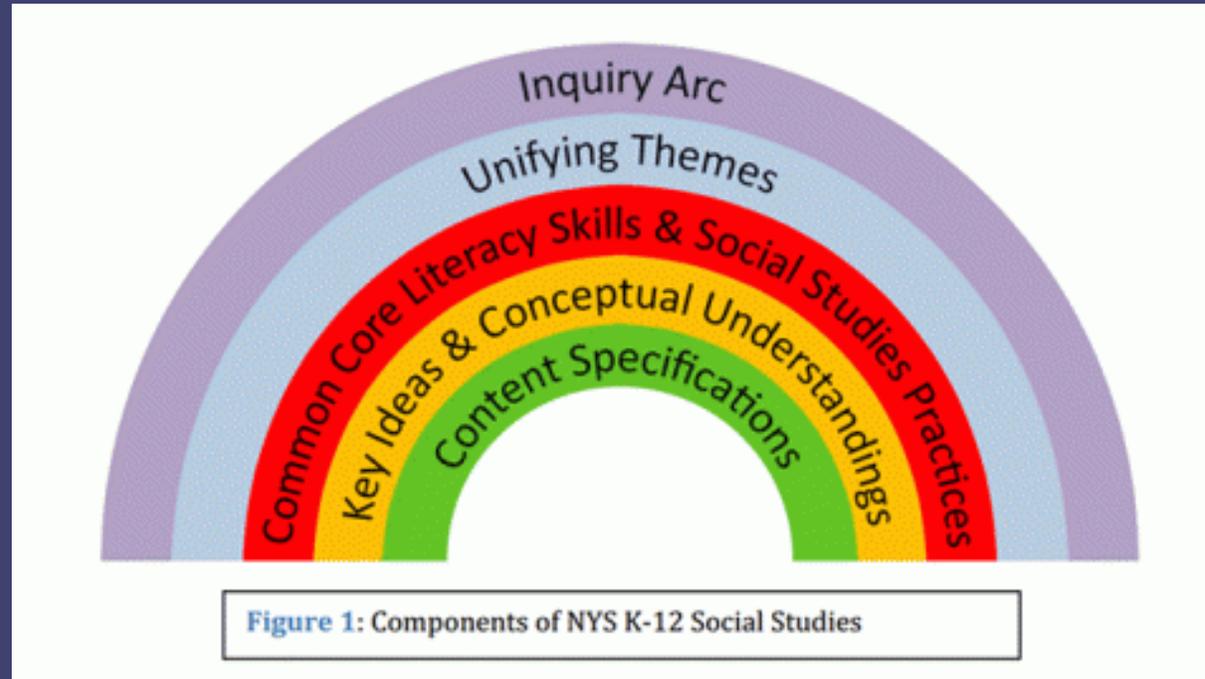
Questioning is the habit of mind that is fostered through inquiry-based learning!



Social Studies

Students as social scientists seek to understand the world and share this understanding with others

NYS K-8 Social Studies Framework



[Link to NYS SS Framework](#)

Social Studies Content Standards

Five content area standards:

1. History of the United States and New York
2. World History
3. Geography
4. Economics
5. Civics, Citizenship, and Government



Grade 2: My Community and Other Communities

“My Community and Other Communities” is organized into five units of study—Individual Development and Cultural Identity; Civic Ideals and Practices; Geography, Humans, and the Environment; Time, Continuity, and Change; and Economic Systems. These units represent five of the unifying themes of social studies, and may be presented in any order.

Students study their local community and learn about characteristics that define urban, suburban, and rural communities. Democratic principles and participation in government are introduced. Interaction with the environment and changes to the environment and their effects are examined. The concept of change over time and examining cause and effect are introduced. Students will examine the availability of resources and the interdependence within and across communities.

Individual Development and Cultural Identity

2.1 A community is a population of various individuals in a common location. It can be character suburban, or rural. Population density and use of the land are some characteristics that define all types of communities.

- 2.1a An urban community, or city, is characterized by dense population and land occupied primarily by buildings and structures that are used for residential and business purposes.
- 2.1b Suburban communities are on the outskirts of cities, where human population is less dense and homes are spaced farther apart.
- 2.1c Rural communities are characterized by large expanses of open land and significantly lower population density than urban or suburban areas.

Content Standards Outlined By Grade Level

Grade 4: New York State and Local History and Government

Grade 4 Social Studies is focused on New York State and local communities and their change over time, incorporating the study of geography, history, economics, and government. Teachers are encouraged to make and teach local connections throughout the course. The course is divided into seven Key Ideas that span the State’s history from before the European colonial era to the modern period. The Key Ideas allow teachers to make connections to present-day New York State and the local community.

Teachers should note that some Key Ideas and Concepts may require extra time or attention. These include Key Ideas 4.4 Government and 4.6 Westward Movement and Industrialization.

4.1 GEOGRAPHY OF NEW YORK STATE: New York State has a diverse geography. Various maps can be used to represent and examine the geography of New York State. (Standard: 3; Theme: GEO)

4.1a Physical and thematic maps can be used to explore New York State’s diverse geography.

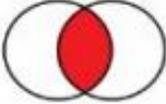
- Students will be able to identify and map New York State’s major physical features, including mountains, plateaus, rivers, lakes, and large bodies of water, such as the Atlantic Ocean and Long Island Sound.
- Students will examine New York State climate and vegetation maps in relation to a New York State physical map, exploring the relationship between physical features and vegetation grown, and between physical features and climate.

4.1b New York State can be represented using a political map that shows cities, capitals, and boundaries.

- Students will create a map of the political features of New York State that includes the capital city and the five most populous cities, as well as their own community.
- Students will examine the location of the capital of New York State and the major cities of New York State in relation to their home community, using directionality, and latitude and longitude coordinates.
- Students will use maps of a variety of scales including a map of the United States and the world to identify and locate the country and states that border New York State.

Social Studies Practices

Social Studies Practices

Gathering, Using, & Interpreting Evidence		Change & Continuity	
Contextualization (time/place)		Causation (cause/effect)	
Compare & Contrast		Geographic Reasoning	
Economics & Economic Systems		Civic Participation	

Social Studies Practices: Vertical Articulation Grades K-4

Social Studies Practices	K	1	2	3	4
Gathering, Interpreting and Using Evidence	Ask questions.	Develop questions about his/her family.	Develop questions about the community.	Develop questions about a world community.	Develop questions about New York State and its history, geography, economics, and/or government.
	Recognize forms of evidence used to make meaning in social studies.	Recognize different forms of evidence used to make meaning in social studies (including sources such as art and photographs, artifacts, oral histories, maps, and graphs).	Recognize different forms of evidence used to make meaning in social studies (including primary and secondary sources, such as art and photographs, artifacts, oral histories, maps, and graphs).	Recognize and use different forms of evidence to make meaning in social studies (including primary and secondary sources, such as art and photographs, artifacts, oral histories, maps, and graphs).	Recognize, use, and analyze different forms of evidence to make meaning in social studies (including primary and secondary sources, such as art and photographs, artifacts, oral histories, maps, and graphs).

SS Curriculum Resource Committee

- **THANK YOU** to all the committee members who helped to select our new Social Studies resources for implementation in 2022-2023!
- The resources were carefully chosen based on the following criteria:
 - Alignment to Standards
 - Social Studies Concepts and Disciplinary Practices
 - Organization
 - Equity and Accessibility
 - Assessment
 - Digital/Print Components
- After several meetings, evaluations, and debriefing sessions, the team ultimately decided upon the following...



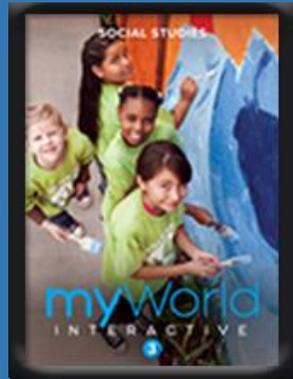
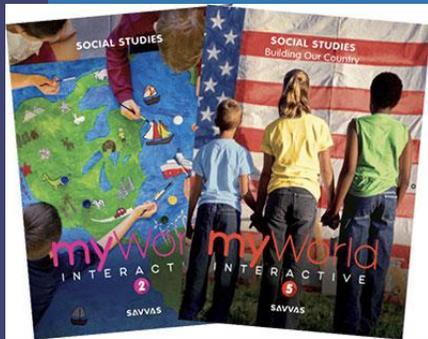


NEW Resources for 2022-2023

Grades K-5

MyWorld Interactive

by Savvas Learning

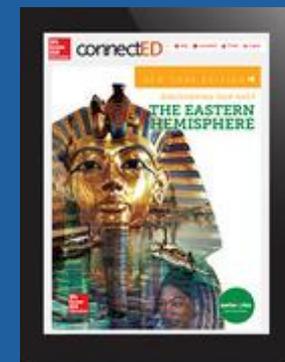
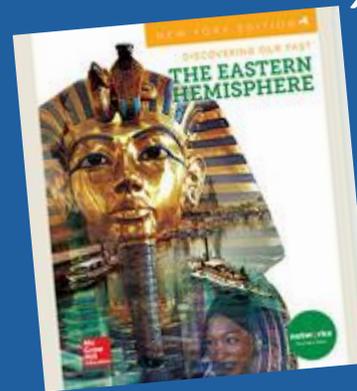


Grade 6

Networks

Discovering Our Past: The Eastern Hemisphere

by McGraw Hill



Social Studies Comes Alive in Our Classrooms!



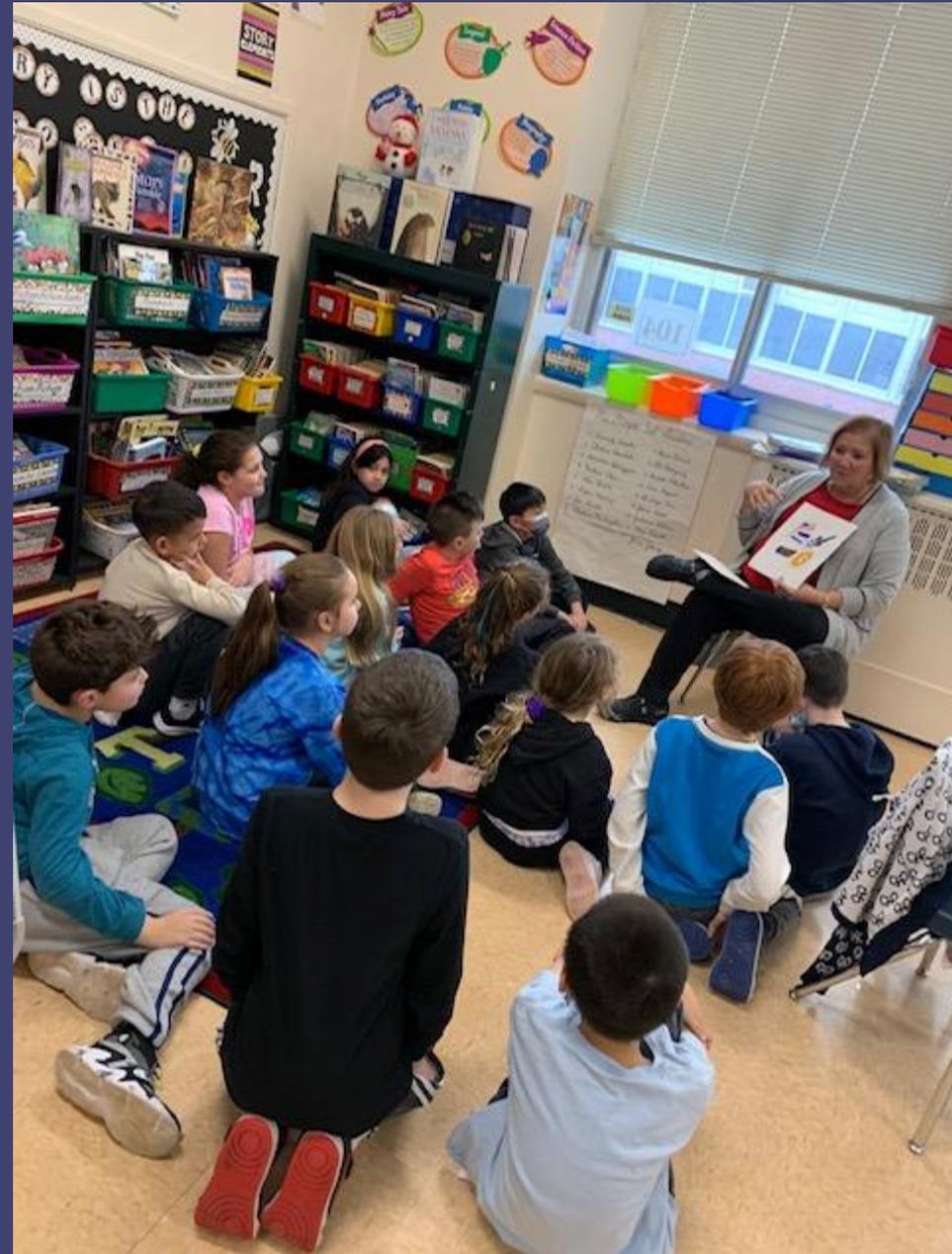
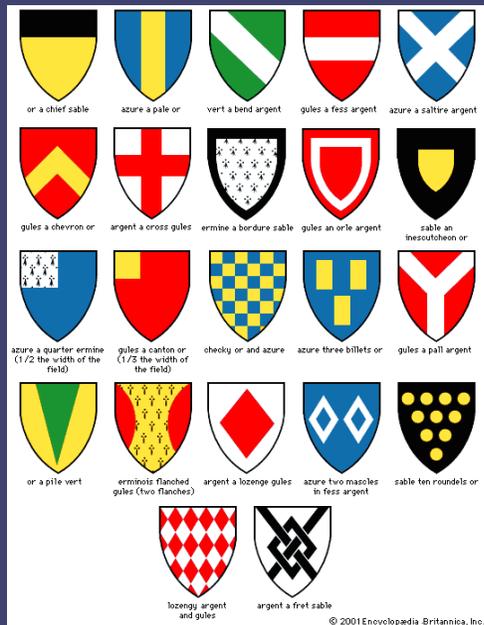
Kindergarteners learn about holidays and create peace projects in honor of Dr. Martin Luther King, Jr.!



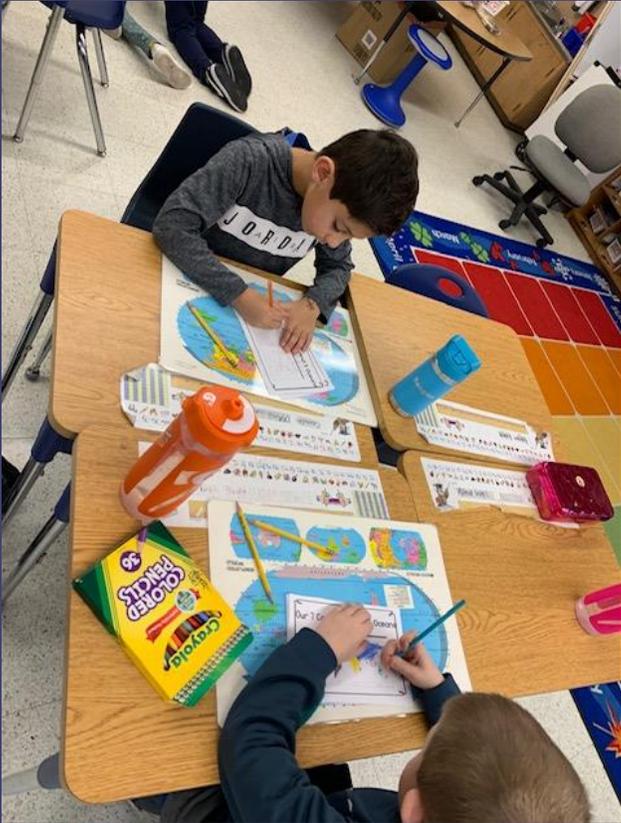
First graders study map keys and use a classroom map to locate treasure!



Third graders study symbols and get ready to design their own *Coat of Arms!*



Geographers exploring continents and oceans!



Fourth graders construct models of Native American villages!

WHAT'S NEWS IN AND OUT OF THE CLASSROOM

9

HERALD SCHOOLS

Dinkelmeyer students make Native American villages

Fourth graders have been learning about the earliest residents of New York State at John G. Dinkelmeyer Elementary School in the North Bellmore School District. Working in teams, they constructed models of Native American villages.

Local history and geography is the focus of the fourth grade social studies curriculum. In Kathleen Kee's and Kim Rackley's classes, students are studying Algonquin and Iroquois customs and practices, including their use of natural resources and raw materials to build homes.

In their model villages, students could include either a longhouse, which was the typical style of housing built by the Iroquois, or a wigwam, which are associated with the Algonquin tribes. Their models also included woodlands, bodies of water and animals indigenous to the area.

Students followed the engineering design process. As a group, they brainstormed ideas, drew a sketch and decided what materials they would need. Supplies included cardboard, construction paper, clay, pipe cleaners and paint. Several students even incorporated natural materials like grass, leaves and twigs.

—Jordan Vallone

JOHN G. DINKELMEYER Elementary School fourth graders, from left, Avery Nicodemi, Charlotte Giannetta, Brielle Orphee and Mackenzie Santos constructed a model of a Native American village as part of their study on the early history of New York.

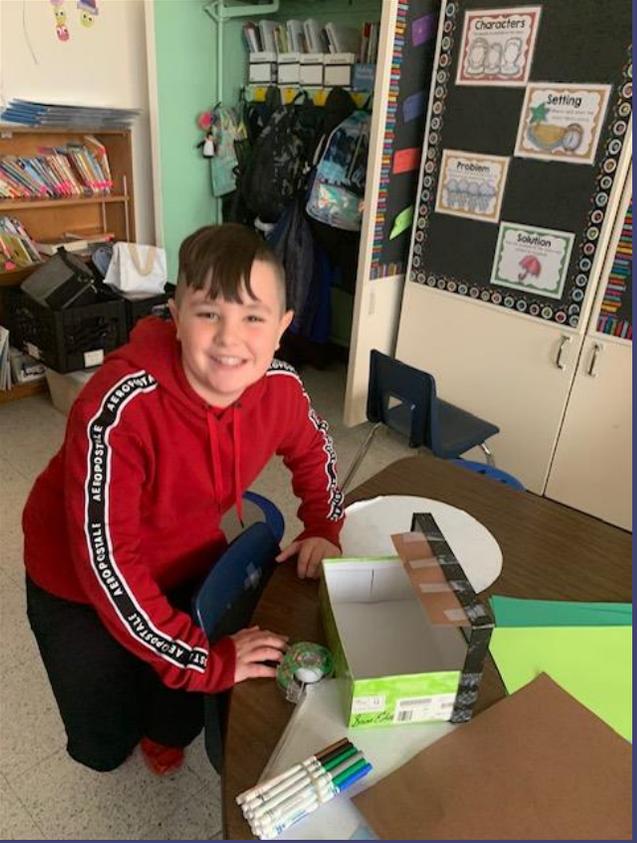
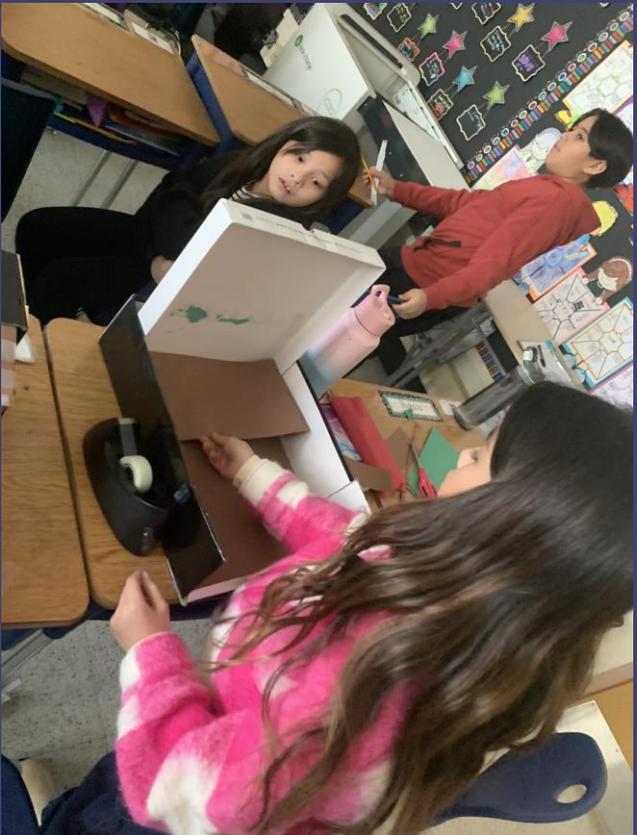


Courtesy North Bellmore School District



BELMORE HERALD — December 1, 2022

Fourth grade historians explore the 1700s and create homes to represent how people lived in colonial times!



Bringing trade and history to life!

Sixth graders create handmade items and participate in a trade fair to simulate the exchange of goods during ancient times.



Community Service Brings our Mission to Life!



Our mission is to inspire all students to be confident, passionate learners with the courage and skills to lead their lives with integrity, while *contributing to our global community with creativity and compassion.*





Community Service



Upcoming Winter Beacon Highlight



THE NORTH BELLMORE SCHOOL DISTRICT NEWSLETTER
 WINTER 2023

THE BEACON

WWW.NORTHBELLMORESCHOOLS.ORG

NORTH BELLMORE SCHOOL DISTRICT
 EST 1907

Curriculum Enhancements Enrich Learning

New educational programs and resources have strengthened North Bellmore's curriculum for the 2022-2023 school year in multiple areas. Enhancements in science, social studies and technology, along with a new Spanish program, have been well received by students and teachers throughout the five elementary schools.

To prepare students for middle school where they will choose a world language to study, North Bellmore relaunched its Spanish program with regular instruction for fifth and sixth graders, as well as a kindergarten enrichment component.

"Research shows that when students begin language learning at the elementary level, they are able to pick up languages faster, with more native-like fluency and a higher level of proficiency," said Spanish teacher Kristen Giris.

Another new initiative that helps students prepare for middle school is the introduction of Google Classroom for sixth graders. The learning management platform serves as a digital communication tool between students and their teacher. It also serves as a place for students to store and organize much of their coursework.

The computer science program has been expanded with a new, hands-on resource in fifth grade, Lego Spike Essential kits. Using their iPads, students use drag-and-drop coding to program different movements in their Lego builds.

Following an extensive review of various social studies programs by a curriculum resource committee, the district adopted MyWorld Interactive by Savvas Learning as the new program for kindergarten through fifth grade. In sixth grade, Discovering Our Past: The Eastern Hemisphere by McGraw Hill was the choice. The new resources are closely aligned with the state standards and have numerous digital components.

"In science, the district is increasing its focus on inquiry-based learning. With more hands-on experiments, students are taking an active role in the discovery of knowledge. The science program focuses on observable events that occur in the universe, with earth, life and physical science topics at each grade level."

"Our devoted team of educators consistently works to enhance our curriculum to create joyful and meaningful learning experiences for students," Superintendent Marie Testa said. "Children in North Bellmore receive a strong educational foundation, complemented by enrichment opportunities, which gives them necessary 21st-century skills."

Mission Statement
 Our mission is to inspire all students to be confident, passionate learners with the courage and skills to lead their lives with integrity, while contributing to our global community with creativity and compassion.

Core Values
 Communities and individuals thrive when the talents and abilities of all are valued and fostered.

Each individual is responsible for his or her choices and the impact they create.

There is no limit to human potential.

Honesty, integrity and trust are essential to sustaining meaningful partnerships.

All people want to learn and succeed.

A safe and healthy environment optimizes learning.

Human life is precious.

Engaging Social Studies Resources Foster Citizenship

With a goal of implementing new social studies resources for the 2022-2023 school year, a curriculum committee of 20 members, including Board of Education trustees, administrators and teachers from different buildings and grade levels, evaluated four programs. They selected MyWorld Interactive by Savvas Learning for grades K-5 and Discovering Our Past: The Eastern Hemisphere by McGraw Hill for sixth grade.

MyWorld Interactive provides a work text for each child, which is a textbook and workbook in one that students can write in. They also have access to a wide variety of digital resources. Each chapter starts with a quest, an inquiry-based project that fosters citizenship and critical thinking.

"There's a lot of ways to reach all different types of learners with the online components," Saw Mill Road Elementary School fourth grade teacher Chrissie Migliano said.

Ms. Migliano displays the digital version of the book on the Smart Board for her lessons, which fosters student engagement. She said the new social studies resources

make strong connections between history and present day. For a unit on explorers, the book showcased many landmarks that they are familiar with that were named after European explorers, such as the Hudson River and the Verrazano Narrows Bridge.

Newbridge Road Elementary School third grade teacher Brenda Adragna said the colorful workbook is appealing to her students. The online support platform includes features for both teachers and students. She also finds ease in connecting to English language arts, using the reading skill of identifying the main idea and supporting details to help students break down challenging information into parts for better understanding.

"MyWorld's engaging, high-leveled text supports the learner using various reading techniques, beautiful maps, engaging interactive document-based Quest activities and much more," she said.

The sixth grade program includes a textbook and workbook for all students, as well as digital resources.

Assistant Superintendent for



Curriculum and Instruction Janet Pollitt said the committee had several goals when evaluating social studies resources. It was important to select a program that promotes civic participation and responsible citizenship. A strong digital component was also important to appeal to today's tech-savvy students. The programs they chose, she said, have online access to interactive maps, pictures and videos.

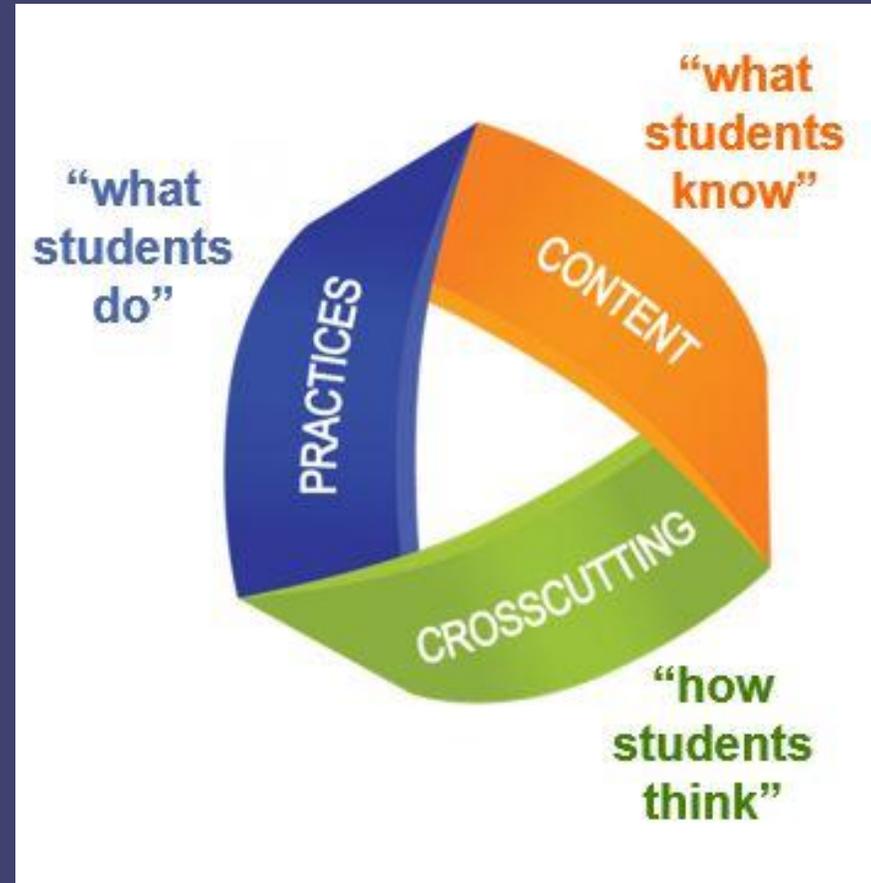
"With the advancement of technology," she said, "we wanted something that had more digital components and was more closely aligned to the revised social studies framework."



Science

Student scientists design and conduct experiments, present and analyze data, interpret results and draw conclusions.

Three-Dimensional Learning



Dimension 1

Science and Engineering Practices

Students mirror the practices of professional scientists and engineers.



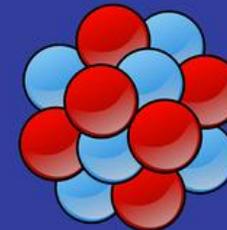
**Asking Questions
and Defining
Problems**



**Planning and
Carrying Out
Investigations**



**Analyzing and
Interpreting Data**



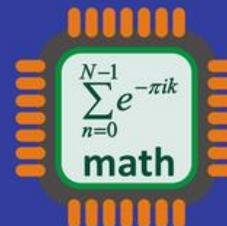
**Developing and
Using Models**



**Constructing
Explanations and
Designing Solutions**



**Engaging in
Argument from
Evidence**



**Using Mathematics
and Computational
Thinking**



**Obtaining, Evaluating
and Communicating
Information**

Dimension 2

Disciplinary Core Ideas

Core ideas outline the developmental progression of content and core understandings across grade levels.

**Physical
Science**

**Earth
Science**

**Life
Science**

Exploring Science Scope Sequence



Physical Science

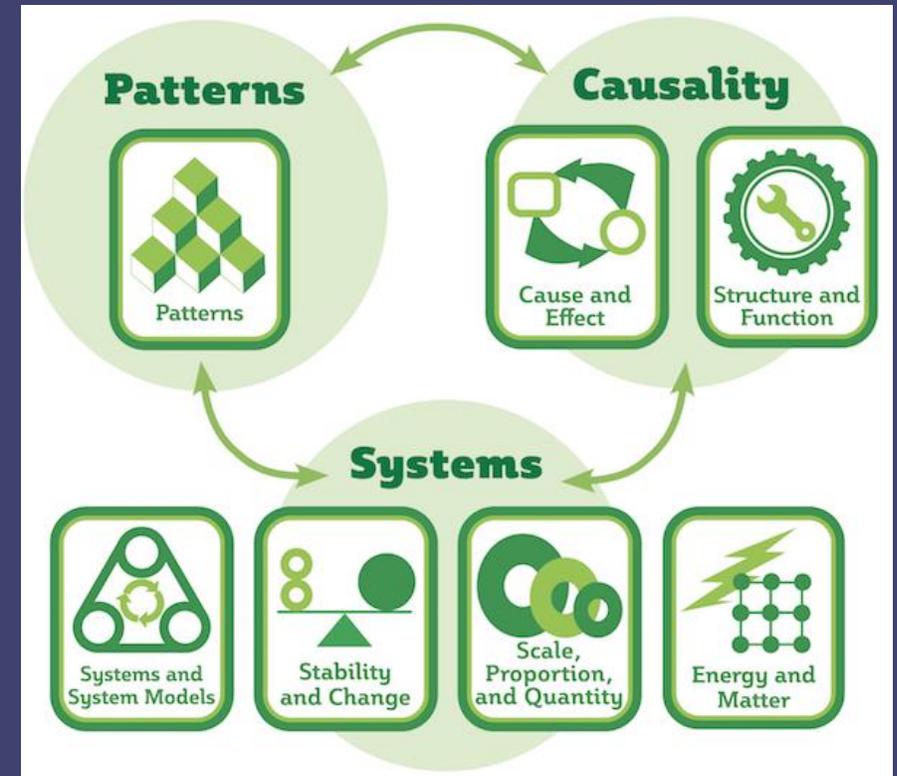
Kindergarten	First Grade	Second Grade	Third Grade	Fourth Grade	Fifth Grade
Pushes and Pulls	Waves: Light and Sound	Structure and Properties of Matter	Forces and Interactions	Energy	Structure and Properties of Matter
How Things Move	Vibrate and Make Sound	Matter	Pushes and Pulls	Waves: Waves and Information	Matter
Hard Push, Soft Push	Investigate: Sound	Liquids	Balanced Forces	Batter Up!	States of Matter
Investigate: Hard and Soft Pushes	Think Like a Scientist: Plan and Investigate	Solids	Unbalanced Forces	Investigate: Speed	Investigate: Matter
Weak Pull, Strong Pull	Sound Makes Things Vibrate	Investigate: Solids and Liquids	Changing Direction	Hit the Ball	Think Like a Scientist: Develop a Model
Investigate: Weak and Strong Pulls	Investigate: Vibration	Properties	Think Like a Scientist: Plan and Conduct an Investigation	Investigate: Motion	Properties of Matter

Dimension 3

Crosscutting Concepts

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

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

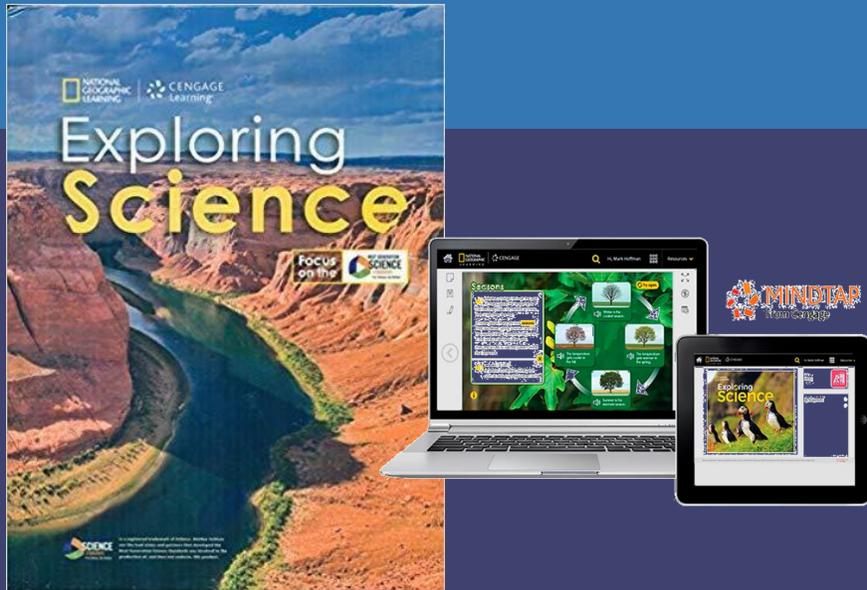




Science Resources

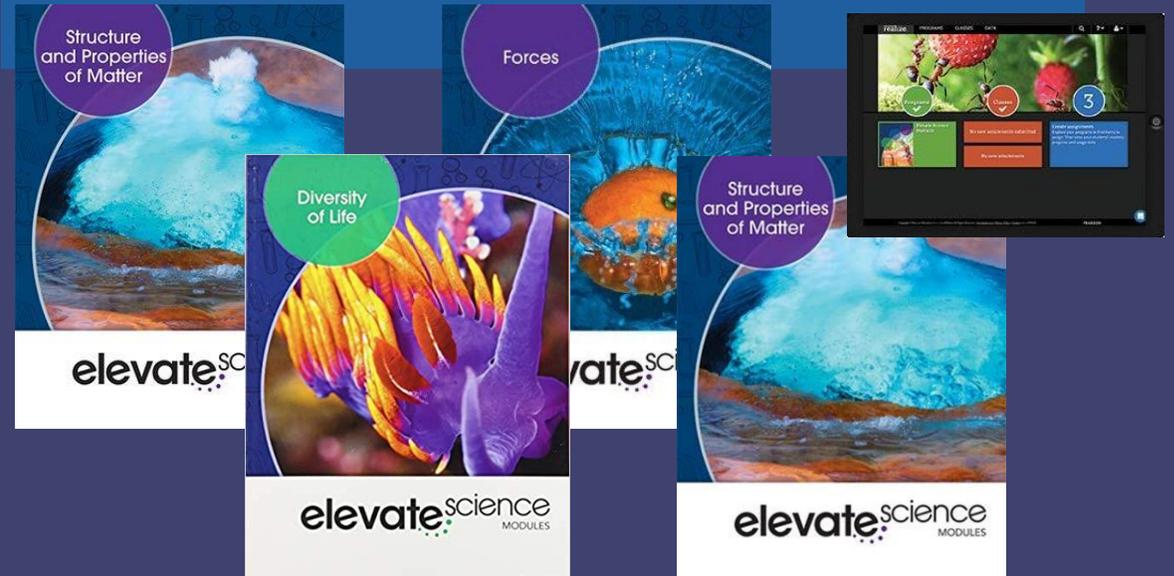
Grades K-5

Exploring Science
by National Geographic



Grade 6

Elevate Science
by Savvas Learning



Science in Our Classrooms!

First Grade Scientists at Work!

Students explore by simulating animal body parts and how the parts help animals to grow and survive!





Scientific Thinking!

Students sort and categorize items that are hot and cold, modes of transportation and ocean animals!



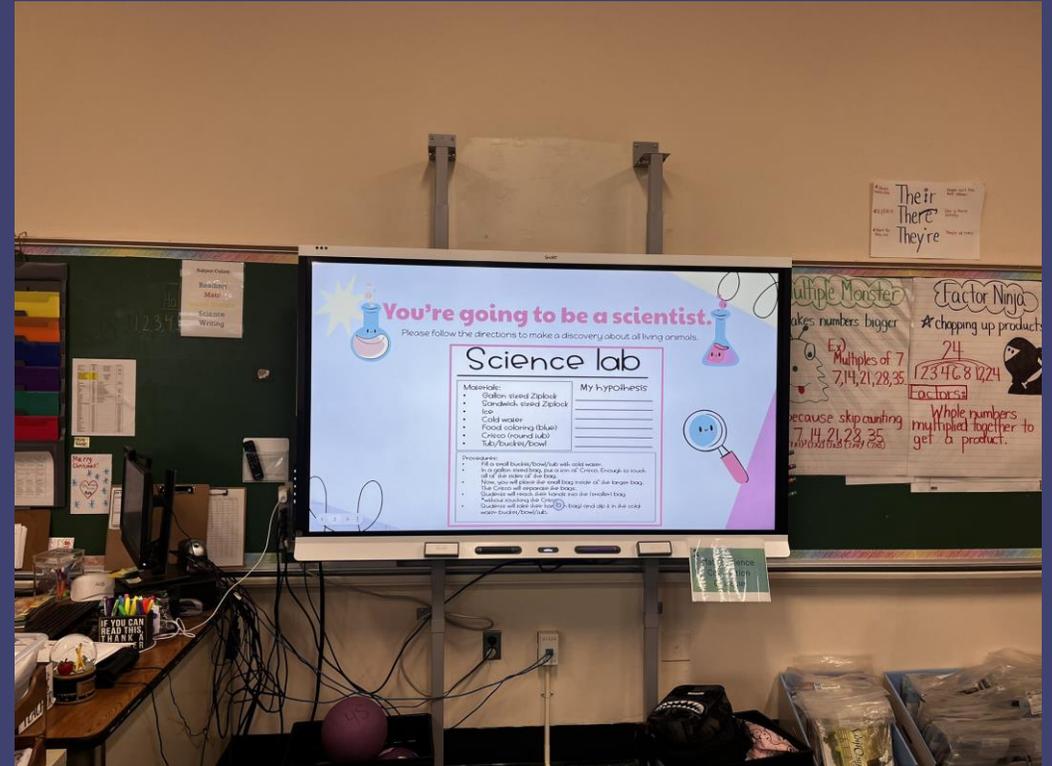
A visit from Myrtle the turtle!

Students learn about external structures and their functions.





Fourth graders learn about external structures on animals and their functions through observations and science inquiry!





*Engineering design
and teamwork!*



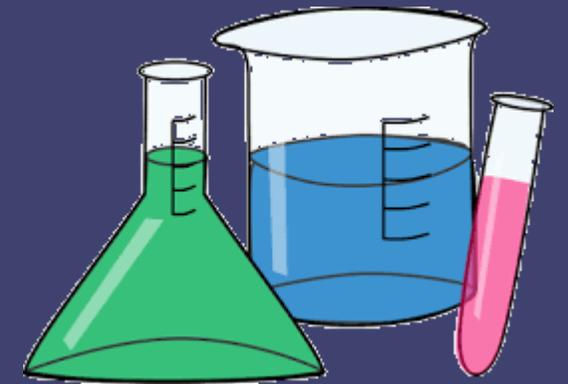
*Second graders learn about
volcanoes and how they change the
Earth!*



NEW

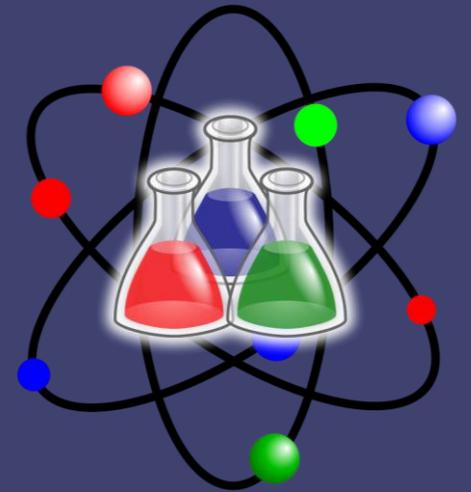
Grade 5 Elementary Science Assessment

- First administration- **Spring 2024** (next school year)
- Computer-Based Testing (CBT)
- The NYS Science Learning Standards are grouped in **bands**:
 - P-2
 - **3-5**
 - 6-8
 - 9-12
- While the elementary test is given in Grade 5, it is really a **Grade 3-5 assessment**. ***We are all in this together!***



Grade 8 Intermediate Science Assessment

- First administration- **Spring 2024** (next school year)
- Computer-Based Testing (CBT)
- The NYS Science Learning Standards are grouped in **bands**:
 - P-2
 - 3-5
 - **6-8**
 - 9-12
- While the intermediate test is given in Grade 8 it is really a **Grade 6-8 assessment**. *We are all in this together!*



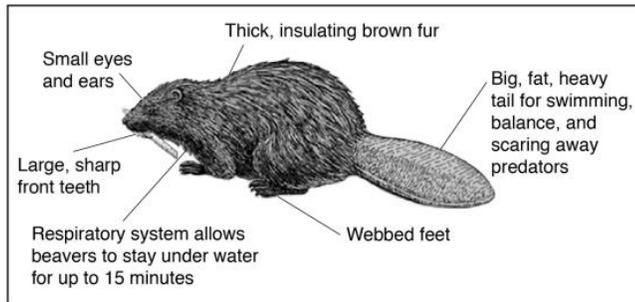
Grade 5/8 Science Test Samplers

Grade 5

Sample-ELS-LS-Beaver Cluster

Base your answers to questions 1 through 6 on the information below and on your knowledge of science.

North American Beaver



The beaver is New York State's official mammal. This animal has many unique structures that serve various functions for growth and survival. A beaver's eyes work best for short distances, yet they contain a second set of eyelids made of a thin transparent (see-through) membrane. The extra lids are pulled over the eyeballs, allowing the beaver to see under water. The beaver's thick, oily coat/fur keeps the animal warm and helps it float in water. Their four front teeth (incisors) are self-sharpening. These large teeth continuously grow. If the teeth

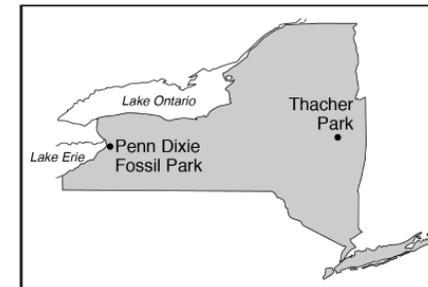
Grade 8

IIS-CBT Sample-Fossil Park cluster

Base your answers to questions 1 through 5 on the information below and on your knowledge of science.

The map below shows the location of Penn Dixie Fossil Park and Thacher Park in New York State.

Fossil Parks in New York State

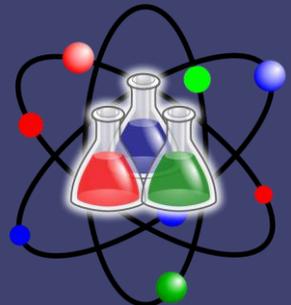


400 million years ago planet Earth was much different than it is today. Seas covered much of New York State. The environment at the time formed rock layers that included fossils of many tropical marine organisms such as brachiopod shells, corals, crinoids (sea lilies) and a form of sea sponges. The Penn Dixie Fossil Park, in western New York, and Thacher Park, located in eastern New York, both contain examples of this past ocean environment. The Penn Dixie Fossil Park has layers of shale that were deposited in deep water about 380 million years ago but

Computer-Based Testing Samplers

To view the test and tools in the CBT digital platform,
visit the Question Sampler website:

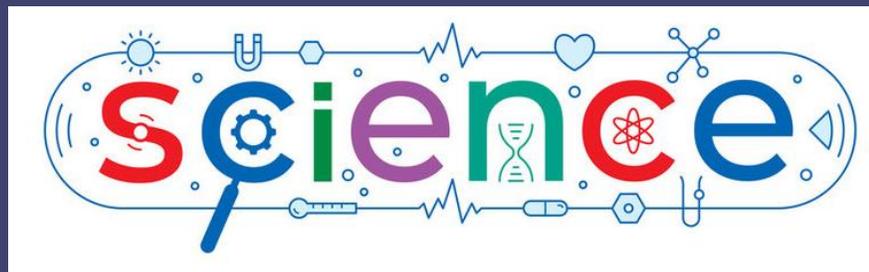
<https://ny.nextera.questarai.com/tds/#practice>



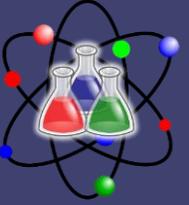
NEW

Science Investigations

- Beginning this year, students are expected to complete **four Investigations** prior to the Grade 5/8 Written Science Assessments.
- These are state-provided **instructional** experiences.
- Scores of the Investigations are not submitted to the State and do not count towards the assessment.
- Student responses **must be stored for 6 months** after they have taken the Grade 5/8 assessments.
- Approximately 15% of the content that will be assessed on the written test is represented across the four investigations.

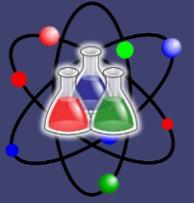


Elementary Investigations by Grade Level



Grade 3	Grade 4	Grade 5
<p>Life Cycles and Traits: <i>Circle of Life</i></p>	<p>Energy: <i>Light It Up</i></p> <p>and</p> <p>Weather and Climate: <i>Cloud in a Bottle</i></p>	<p>Structure and Properties of Matter: <i>What's in the Bag?</i></p>

Intermediate Investigations by Grade Level



Grade 6	Grades 7-8
<p>Structure Function and Information Processing: It's Alive?</p> <p>Structures and Properties of Matter: All Mixed Up</p> <p>(2 investigations)</p>	<p>Energy: Cool It!</p> <p>Weather and Climate: Air Mass Matters</p> <p>(2 investigations)</p>

Investigations Materials

Each Investigation comes with:

- ✓ Teacher Directions
- ✓ Student Directions
- ✓ Student Answer Packet(s)
- ✓ Scoring Rubric

The District will provide:

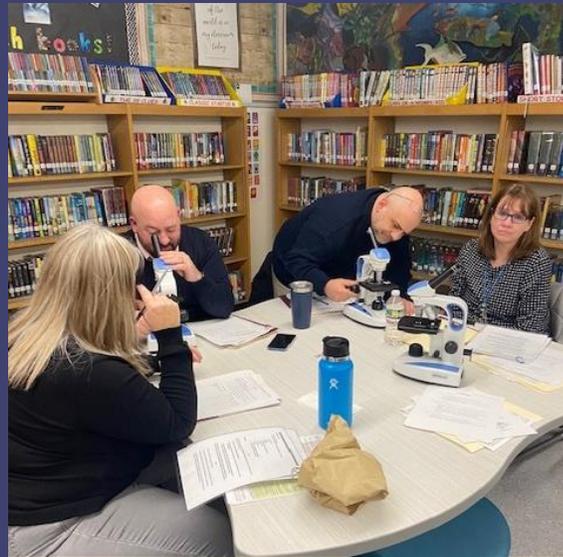
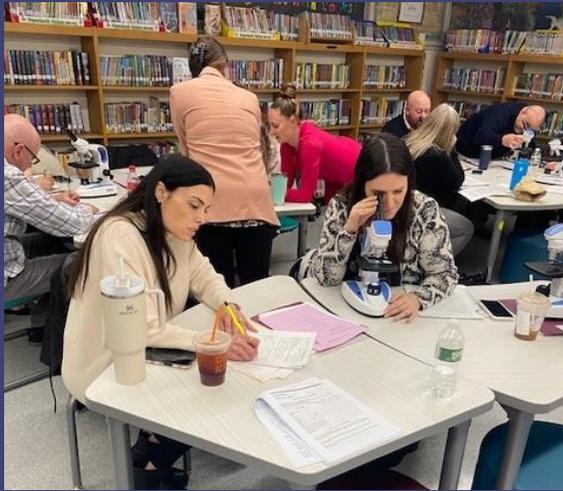
- ✓ Class set of Student Copies
- ✓ Class set of Scoring Rubric
- ✓ All materials needed to conduct the Investigations
- ✓ Folders to store the student responses (stored in the main office)



Teachers engage in science investigations during recent professional development workshops!



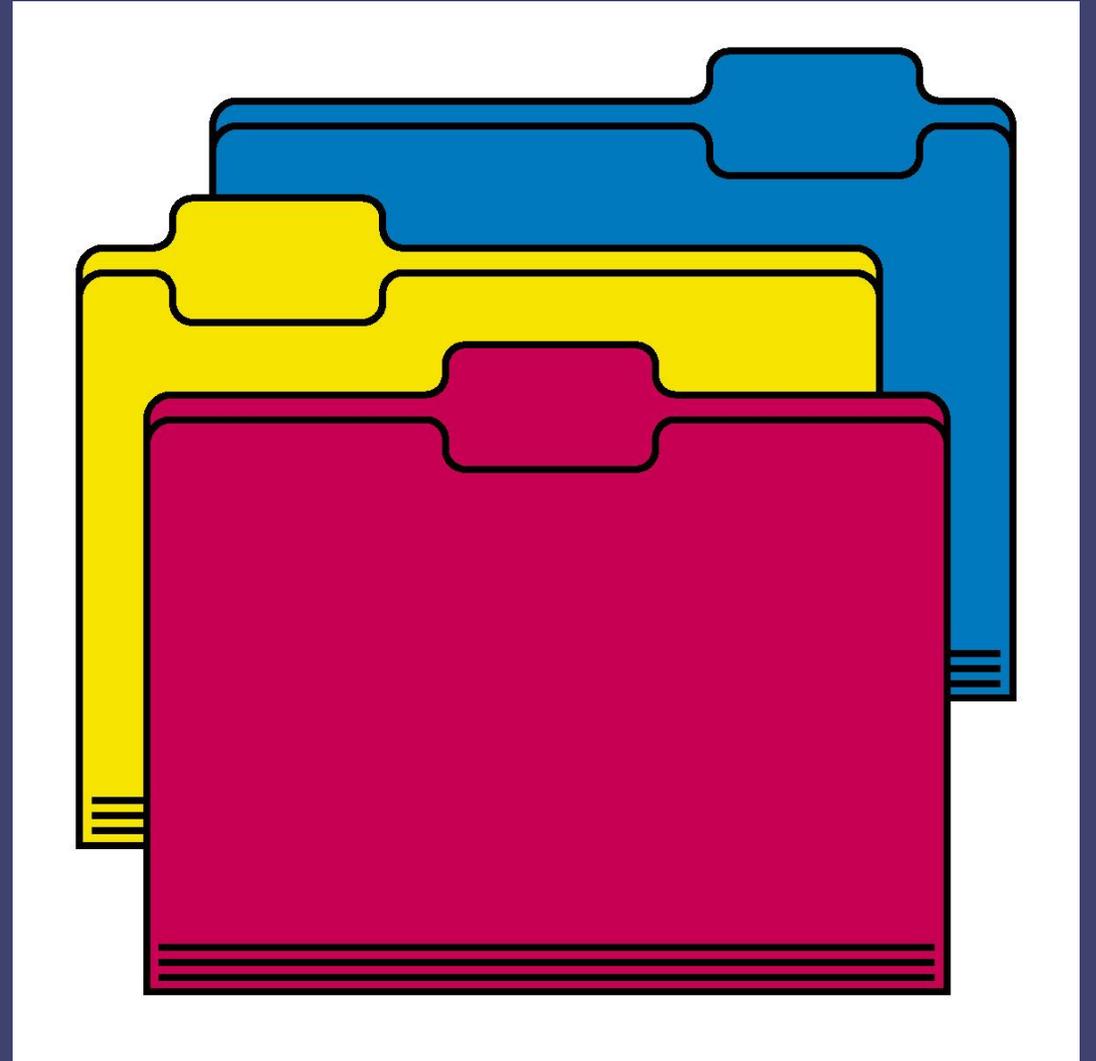
BMCHSD Science Chairs lead the *It's Alive?* investigation with our 6th grade teachers.

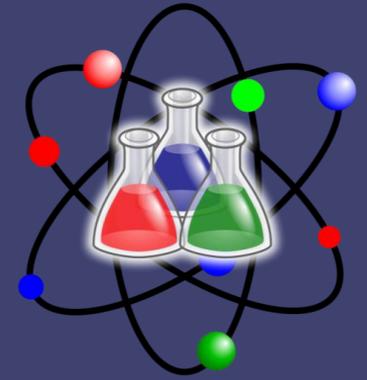


Digital Access to the Investigations

OneDrive Shared Folder

[Science Investigations 2022](#)





“Inquiry is more important than answers, for it is the *questions* we ask and the way in which we ask them that defines us.”



-John Paul Caponigro