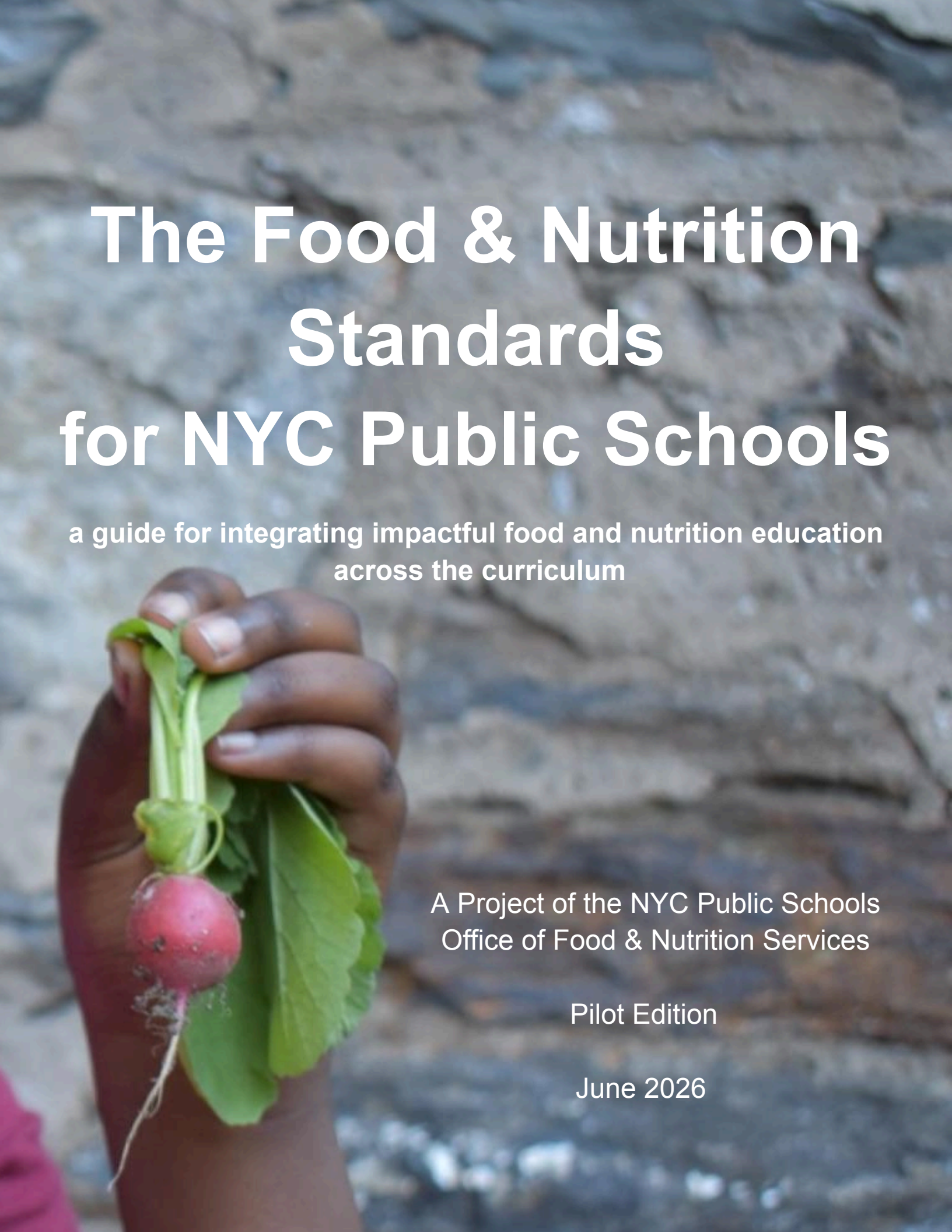


The Food & Nutrition Standards for NYC Public Schools

a guide for integrating impactful food and nutrition education across the curriculum

A Project of the NYC Public Schools
Office of Food & Nutrition Services

Pilot Edition

June 2026

Welcome to the Food & Nutrition Standards for NYC Public Schools!

With dual goals of **providing equitable access to impactful food education for every student in NYC public schools**, and **ensuring teachers have resources and support to provide impactful food education instruction**, the Food & Nutrition Standards for NYC Public Schools have taken a collaborative approach to developing a set of interdisciplinary food education instructional standards. Led by the NYC Public Schools Office of Food & Nutrition Services (OFNS), this project also includes the voices of teachers, administrators, and food and nutrition professionals from NYC. We are also inspired by our ongoing collaboration with the Mayor's Office on Food Policy. Together, we have crafted the Food Education Roadmap, which prioritizes the expansion of food education in our public schools and charts a path to developing a healthy next generation of students. Lastly, we want to acknowledge an original inspiration for this work; Pilot Light (Chicago, IL) whose Food Education Standards helped to inform and shape our thinking to kick off this project.

While *nutrition as a topic in health education* is often viewed as limited to food choices for personal health, the broader scope of *food education* includes not only the diet-health connection but also the role that food plays in one's life, relationships, culture, communities, environment, history, and society. Food education has the potential to help our students make healthy choices, develop healthy habits and relationships with food, and understand how food is systematically connected to nutrition, health, the environment, the economy, community, and more.

In order to make food education equitable and accessible to all students, the Food and Nutrition Standards not only present standards for learning about food and nutrition, but also tie them to existing standards and core curricula utilized across NYC Public Schools so that they can be implemented seamlessly across subject areas and grade levels. These standards do not ask schools to change or replace their curricula, but instead highlight opportunities for food and nutrition education to be highlighted in the existing curricula, thus strengthening the existing curricula while building students' understanding of food and nutrition topics.

Imagine if, in addition to the foundational groundwork laid in Health classrooms, every core subject (Science, Math, English, Social Studies) teacher incorporated just 5 conversations related to food and nutrition topics in their curriculum in the course of a year, students would have 20 opportunities to build their knowledge of food and nutrition every year - and 260 opportunities by the end of their K-12 experience! Add to that meaningful opportunities to embed food and nutrition learning in advisory, morning meeting, art, engineering, LOTE, and more, and students will graduate deeply aware of their food system, their own relationships with food, and the knowledge needed to make informed food choices into their futures. Research shows that nutrition impacts growth, development, and learning in critical ways; embedding learning around food and nutrition is key to students making the best nutrition choices in their own lives.

We are well aware that most teacher training programs do not include food and nutrition practices, so the standards are written to support teachers with resources, lesson connections, and equity considerations to keep in mind while implementing each area in the classroom. In addition, OFNS is committed to providing high-quality professional learning around these standards, piloting with model teachers in the coming year, and continuing to grow a library of lessons and resources for teachers to support implementation and teacher learning around food and nutrition education across the curriculum.

We see this first edition as a pilot of these standards and aim for this to be a living breathing document, continually shaped by the educators who use it. We look forward to hearing from you and sharing in your food education journey!

Last updated: June 10, 2026

Note from Pamela Koch, EdD, RDN
Mary Swartz Rose Associate Professor of Nutrition and Education
Faculty Director, Laurie M. Tisch Center for Food, Education & Policy
Teachers College Columbia University

"Teaching about food holds the power to transform not only what appears on children's noon-time trays but also the very future of our planet and our societies."

This quote by educational researcher Marcus Weaver-Hightower (*Educational Dimensions of School Lunch: Critical Perspectives* p. xi, 2018) beautifully illustrates that food education advanced us toward the laudable goal of students taking and eating school lunch. And, that food education can do so much more.

Today's students are tomorrow's adults who will face the health crisis of high rates of diet-related metabolic diseases such as type 2 diabetes and cardiovascular disease. These decrease quality of life and are about 90% of our nation's health care costs. Predictions are for these diseases to be at even higher rates when today's school children are middle-aged.

Today's students will also face a world in which disruptions to our ecosystem are caused by our food system, such as pollution to waterways causing dead zones and antibiotic resistance caused by antibiotics being fed to farm animals. We also have increasing evidence that exposure to pesticides increases the risk of some cancers, and that plastic food packaging is increasing microplastics in humans which are increasingly being linked to health issues.

Thus, we need today's students to be the food citizens of the future who advocate for a food system that cares for our earth's fragile ecosystem, at the same time as building a society with equitable access to the right amount of nourishing food. This is what will transform the very future of our planet and society.

At the same time, we live in a world where our current food environment makes it all too common for us to develop a negative relationship with food, eating, and our body image. We also have many students from families struggling to put their next meal on the table. We need education about food to first and foremost be a positive and uplifting experience for students to develop a healthy relationship with food.

My decades of experience conducting food and nutrition education in New York City Public schools have shown me the power of that education. Here are a few stories:

Food preparation, if they cook it they will eat it: I made a salad with a first grade class in the month of May. I bought radishes at the farmers market. When I held up a whole radish (root, stem and leaves) and asked what it was, I got blank stares. I told the students it was a radish and they have a strong spicy flavor to accent our salad. I gave each student a quarter of a radish and told them to chop them as small as they could – with their little plastic knives. I had never seen such tiny pieces of radish in my life! We threw them in the salad and the students LOVED it, proclaiming the radishes added a kick to the salad. Imagine what the reaction could have been if they had not had that chopping experience. Hands-on food experience made the connection.

Students share what they learn with their caregivers: I helped develop a program for fourth graders that combined art with food and nutrition education. Our goal was for the students to learn about and make art about vegetables to encourage them to eat the hot vegetables and the salad bar at school lunch. We had an exhibit with the students' art at the end of the program. A parent called me aside and said, "I had to come see what this program is all about. Now when we are in the produce section in the grocery store my child is naming all the vegetables and asking me to buy them!"

I am so excited that these food & nutrition standards are just what New York City Public Schools need to transform not only what is on the students' noon-time trays but also to improve human health, social justice, and our planet's ecosystem — Pamela Koch

CONTENTS

How to Use these Standards: Overview

There are five overall standards areas:

- Food & Identity
- Where Food Comes From
- Food & Environment
- Internal & External Influences on Food
- Food & Health

Each one is broken down into specific standards for each grade band: K-2, 3-5, 6-8, 9-12

This document features the full K-12 breakdown, but you can also view individual grade bands in isolation in separate documents, here:

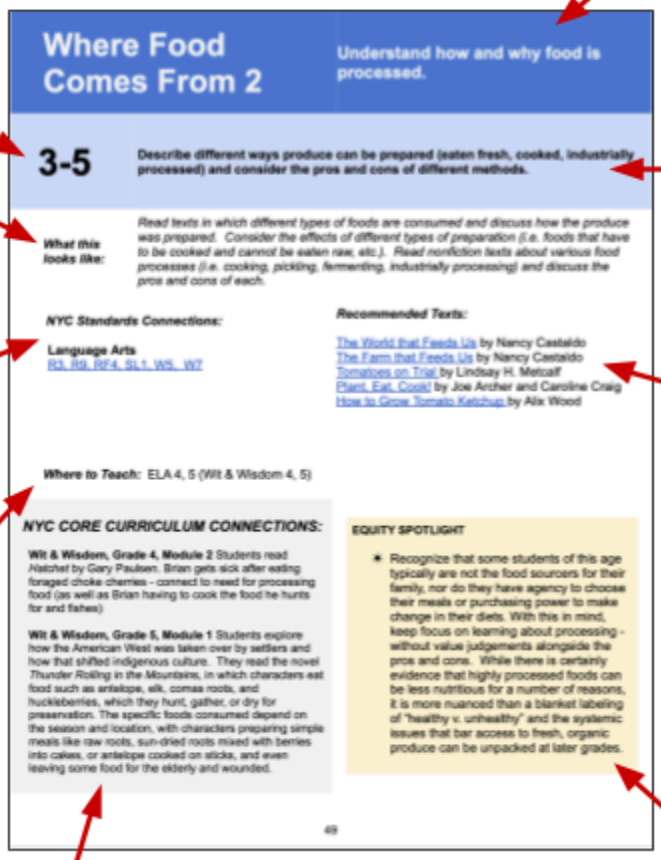
- K-2 Food & Nutrition Standards
- 3-5 Food & Nutrition Standards
- 6-8 Food & Nutrition Standards
- 9-12 Food & Nutrition Standards

The goal is not for teachers to address every standard in a single class. Instead,“Where to Teach” gives suggested subject areas and grade levels that align with existing NYC DOE core curricula and support standards being spread across the curricula.

Each page features implementation tools for teachers including:

- “What this looks like” to give some quick-to-read ideas for what the standard might look like in practice.
- “NYC Standards Connections” listing core curricular standards adopted in NYC public schools that align to the implementation of the given standard.
- “Recommended Texts” that support teaching the standard, with links to Sora app editions that can be digitally borrowed by NYC public school teachers.
- “Where to Teach” listing specific subject areas and grade levels that are well-aligned to the standard and, when possible, to complimentary NYC public schools core curricula.
- “NYC Core Curriculum Connections” listing specific lessons and units across core curricula that are selections for NYC public schools to make integrating easier for teachers.
- “Equity Spotlights” to note specific considerations for teaching these standards in an equitable, culturally-responsive classroom.

How to Use these Standards: Navigation Tips



Overall standard

Grade band

Standard specific to grade band

What this looks like: how the standard might look in practice

NYC Standards Connections hyperlinked to full text of the standards in the Appendix

Recommended Texts with direct links to the Citywide Digital Library on Sora, with copies available to NYC Public Schools educators and students

Where to teach: recommended subjects and specific grade levels to address this standard

NYC Core Curriculum Connections for current NYC public schools Core Curriculum selections (*Note: for some standards, these fall onto a second page)*

Equity Spotlight notes throughout with tips and tools for implementing standards with an eye toward equity!

NAVIGATION NOTE: If you are viewing the document in Google docs, be sure that the document tabs and outline is expanded, as this provides a way to quickly navigate between sections. To enable this feature, click the icon in the top left corner of your screen, which looks like this:

Food & Identity

Food is part of our identities.

Students will:

1. Explore how different cultures, religions, geographies, and histories shape people's relationships with food.
2. Learn about where food originated and its role in history.
3. Build a respect for the various reasons people might eat or avoid certain foods.

Where Food Comes From

Our food system is the complex process of food going from its source to our plates.

Students will:

1. Understand how food is grown, raised, and harvested.
2. Understand how and why food is processed.
3. Understand the steps that food takes to get from source to table, and the roles that people & technology play throughout the process.
4. Understand how to prepare food.

Food & Environment

The environment is a crucial part of our food system.

Students will:

1. Understand that all living things need energy from food in order to live.
2. Understand that we are part of a food web that includes all living things and we are interdependent on other organisms to live.
3. Know that plants need specific conditions to grow and thrive.
4. Understand how seasons, geography, and climate affect what we eat and when.
5. Understand how food production and food waste impacts our environment.
6. Determine how we can make choices and encourage others to make choices that neutrally or positively impact the environment.

Internal & External Influences on Food

Recognizing internal & external influences helps us make informed food decisions.

Students will:

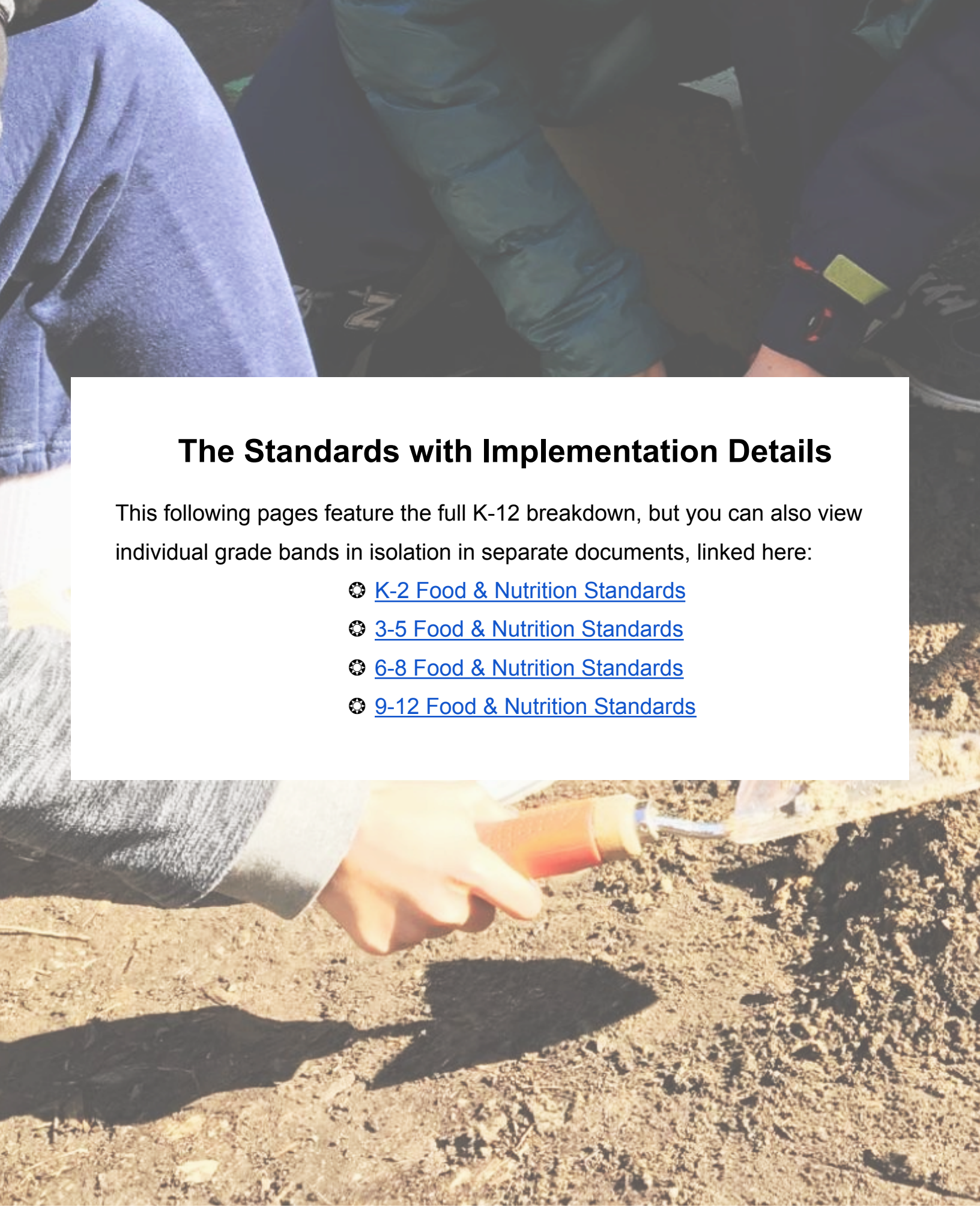
1. Recognize hunger, fullness, and thirst cues and their influence on food-related decision-making.
2. Explore mindful eating approaches to understand how what we eat makes us feel.
3. Recognize media & marketing's influence on food choices.
4. Recognize the influence of other people on food choices.
5. Analyze how economic and social factors influence food choices.

Food & Health

The foods we eat nourish our bodies.

Students will:

1. Describe how a variety of whole and minimally processed foods provide us with the nourishment we need for our minds and bodies.
2. Understand the importance of hydration.
3. Choose minimally- and less-processed foods more often by gaining the experience and skills to identify what is in the foods available to you.
4. When you eat a food that comes in a package, read the list of ingredients first to understand what it is made from, and know how to read a nutrition label to understand more.



The Standards with Implementation Details

This following pages feature the full K-12 breakdown, but you can also view individual grade bands in isolation in separate documents, linked here:

- K-2 Food & Nutrition Standards
- 3-5 Food & Nutrition Standards
- 6-8 Food & Nutrition Standards
- 9-12 Food & Nutrition Standards

Food & Identity

Food is part of our identities.

Students will:

1. Explore how different cultures, religions, geographies, and histories shape people's relationships with food

2. Learn about where food originated and its role in history.

3. Build a respect for the various reasons people might eat or avoid certain foods.

Food & Identity 1

Explore how different cultures, religions, geographies, and histories shape people's relationships with food.

K-2 Identify unique and shared ways that people eat and prepare foods based on culture, likes, dietary needs, and what food is available where they live.[1]

3-5 Describe how peoples' cultures, geographies, and experiences influence their connections to food.

6-8 Explain how food can symbolize culture and history in literature and life.

9-12 Identify how cuisines from a variety of regions and cultures evolved over time and determine what factors influenced their evolution. Reflect on and share how food represents aspects of you - your culture, religion, geography, history, or experiences. Find examples of food as symbolism in literature.

EQUITY SPOTLIGHT:

- ☀ Recognize that not all students relate to a specific culture, or to the cultural background that matches their biological identity. For example, a student who is adopted may be biologically from a specific country or region but may not associate directly with that same culture, having been raised in a family from a different cultural background. A student who lives in foster care may not be aware of their own cultural background. For a number of reasons, a student might have negative associations with aspects of their own culture or cultural background.
- ☀ For the reasons listed above, when designing an activity that might ask students to draw from their culture or cultural background, expand to invite students to "draw from your own cultural background or a cultural background of interest to you," allowing everyone to participate without feeling that they must have or celebrate a personal culture.
- ☀ Be careful not to "other" cultures that are different from your own by referencing them as "other cultures" - other to *what?* Rather than situating the "norm" as your own lived experience, use language that sees diversity as the norm.

[1] Adapted from Oregon Department of Education. (2016). *Oregon health education standards*, K.4

Food & Identity 1

Explore how different cultures, religions, geographies, and histories shape people's relationships with food.

K-2

Identify unique and shared ways that people eat and prepare foods based on culture, likes, dietary needs, and what food is available where they live.[2]

What this looks like:

Discuss similarities and differences of foods across cultures and traditions. Read texts that look at a variety of foods and feature characters with a range of cultures, geographies, likes, and dietary needs.

NYC Standards Connections:

Language Arts
R9, RF4, W4, SL1, SL4

Social Studies
K.1, K.2, 1.1, 1.

Recommended Texts:

My Food, Your Food, Our Food by Emma Carlson Berne
Let's Eat by Alexandra Penfold
Hot Pot Night by Vincent Chen
Bee-bim Bop! by Linda Sue Park
Our Little Kitchen by Jillian Tamaki
Every Night is Pizza Night by J. Kenji Lopez-Alt
Eggs, Please! By Cheryl Yau Chepusova

Where to Teach:
Social Studies: Grades K, 1; Language Arts: Grade 2

LEFT: Elementary school students engage in gardening with the NY Horticultural Society.

[2] Adapted from Oregon Department of Education. (2016). *Oregon health education standards*, K.4

Food & Identity 1

Explore how different cultures, religions, geographies, and histories shape people's relationships with food.

K-2

Identify unique and shared ways that people eat and prepare foods based on culture, likes, dietary needs, and what food is available where they live.

NYC CORE CURRICULUM CONNECTIONS:

Wit & Wisdom, Grade 2, Module 4 Students read and analyze Stone Soup and Bone Button Borscht, two versions of a classic folktale about food bringing communities together.

HMH, Grade 2, Module 10 "Many Cultures, One World" students watch a video called *What's for Lunch Around the World?* showing what people eat for lunch in different parts of the world

Imagine Learning While there are not direct text ties in IL's text selections for K-2, we encourage teachers to incorporate read aloud text(s) from the recommended list above alongside **Grade 2, Module 1, "Schools and Community,"** which can later be recalled as a compliment to **Module 3, "Plants and Pollinators."**

Passport to Social Studies, Grade K, Unit 1, Lesson 4, Classroom Communities are Diverse Students compare and contrast similarities and differences of classroom community members. Prompts include similarities around food and how food preferences can make us special or unique.

Passport to Social Studies, Grade K, Unit 2, Lesson 1, We Are the Same, We Are Different Students understand that certain attributes make them unique; all people share similarities as well as exhibit differences. Discussion includes various ways people can be similar or different including foods we eat. Students are prompted to share favorite foods.

Passport to Social Studies, Grade K, Unit 2, Lesson 4, Our Culture Makes Us Unique Students learn that people of the same culture share beliefs, traditions, religions, and holidays. Discussion prompts include, What are some examples of cultural foods?, What are some foods your family enjoys eating and that reflect your culture?

Passport to Social Studies, Grade K, Unit 4, Lesson 5, Family Traditions Students explore the various ways that families develop traditions and pass them down from one generation to the next. Students learn the importance of traditions in preserving family history, culture, values, and beliefs.

Passport to Social Studies, Grade K, Unit 4, Lesson 6, Family Celebrations Students compare and contrast ways that family celebrations are alike and different.

Passport to Social Studies, Grade 1, Unit 1, Lesson 7, Traditions Students identify family traditions and understand how traditions represent families' customs, background, or history. Discussion, shared text, and activity involve food as a part of family tradition.

Passport to Social Studies, Grade 1, Unit 2, Lesson 8, Cultural Heritage Students identify and share elements of their family's cultural heritage. Prompts for discussion include food as part of cultural heritage.

Food & Identity 1

Explore how different cultures, religions, geographies, and histories shape people's relationships with food.

3-5 Describe how peoples' cultures, geographies, and experiences influence their connections to food.

What this looks like:

Explore food across different geographies, cultures, and periods of history. Describe how characters' cultures, geographies, and experiences influence their connections to food - and connect to how your own culture, location, and experiences influence your *food.*

NYC Standards Connections:

Language Arts
R3, R9, RF4, SL1, W5 (4th & 5th), W7

Social Studies Conceptual Understandings (from NYC Scope & Sequence):
3.3, 3.4, 3.5; 4.2, 4.3, 4.7

Recommended Texts:

Fry Bread by Kevin Noble Maillard
When Alexander Graced the Table by Alexander Smalls
Vamos! Let's Go Eat by Raul the Third
Fortune Cookies for Everyone by Mia Wenjen
Family Feast! By Carole Boston Weatherford
Soup's On Around the World by Denyse Waissbluth
Teatime Around the World by Denyse Waissbluth

Where to Teach:
Social Studies: Grades 3, 4;
ELA: Grades 3-5 (Wit & Wisdom: Grade 3 & 4; HMH: Grade 3, 4, & 5; Imagine Learning: Grade 5)

RIGHT: A student engages in a hands-on cooking workshop.

Food & Identity 1

Explore how different cultures, religions, geographies, and histories shape people's relationships with food.

3-5 Describe how peoples' cultures, geographies, and experiences influence their connections to food.

NYC CORE CURRICULUM CONNECTIONS:

Wit & Wisdom, Grade 3, Module 3 Exploring the question "How do stories help us understand immigrants' experiences?" invite students to think about traditions that immigrants bring across borders, and the significance of various cultural connections. Allen Say's *Tea with Milk* is a featured text.

Wit & Wisdom, Grade 4, Module 4 Students read *Walk Two Moons* by Sharon Creech. While not a focus of the text, food is referenced as shared by the characters and to build imagery (Ch. 10),

HMH, Grade 3, Module 2, "Use Your Words" Students read *Dear Primo* by Dunkin Tonatiuh, letters back and forth between two cousins, one in the US and one in Mexico. They talk about differences in their cultures and find that they are also alike. Their letters include their favorite foods - quesadillas for Carlitos and pizza for Charlie - and each family's shopping (Carlitos at the mercado, Charlie at the grocery store).

HMH, Grade 4, Module 3, "Rise to the Occasion" This module includes *My Diary from Here to There* by Amada Irma Pérez (week 3), the character's diary as her family moves from Mexico to the United States. It includes both connections to Mexican foods that the character associates with home, as well as her father getting work on a farm - and hearing about the farm workers rights movement. Connections to both food and culture as well as food justice.

HMH, Grade 5, Module 8, "A New Home" In week 2, students read *From Scratch* by Susie Castellano, about a girl named Priya who struggles to adjust after moving from her native India to the U.S. As she and her mother cook together, we learn Priya's feelings about moving from one culture to another, especially highlighted by food and groceries. Themes include dietary needs based on religion and culture, food across cultures, fitting in.

HMH, Grade 5, Module 8 "A New Home" In week 3, students read *Inside Out and Back Again* by Thanhha Lai, about ten-year-old Hà who has moved with her mother and brother to the United States from Saigon, Vietnam, just after the Vietnam war. Hà doesn't feel like she fits in as she doesn't speak English - and eats her lunch in the bathroom, alone. Ms. Washington, a kind teacher next door, helps Hà learn English and sends her to school with a bagged lunch to eat in the classroom, and Hà is surprised to find she is able to make friends.

Passport to Social Studies, Grade 3, Egypt Case Study, Lesson 5, Investigation Egyptian Food Students research and take bulleted notes about Egyptian food by examining images and captions.

Passport to Social Studies, Grade 3, Republic of China Case Study, Lesson 5, China's Authentic Cuisine Students investigate the various regions of China and learn how these regions influenced Chinese cuisine.

Passport to Social Studies, Grade 3, Peru Case Study, Lesson 6, Investigating Peruvian Culture Students investigate the food, clothing, and homes of different regions in Peru.

Passport to Social Studies, Grade 4, Unit 3, Lesson 2, Geography of the Thirteen Colonies and New York Students learn about early New York's development and establishment as an emerging center of commerce by analyzing geographical features and identifying natural resources.

Food & Identity 1

Explore how different cultures, religions, geographies, and histories shape people's relationships with food.

6-8 Explain how food can symbolize culture and history in literature and life.

What this looks like: *Identify characters' experiences in texts that show how food symbolizes a connection to their culture or history, and allow students to share connections they may have of foods that similarly represent their culture or history.*

NYC Standards Connections:

Language Arts
R4, R6, SL1

Social Studies Conceptual Understandings (from NYC Scope & Sequence):
6.5, 7.1, 7.2, 8.2

Recommended Texts:

A Spoonful of Time by Flora Ahn
Tasty by Victoria Grace Elliott
Ida in the Middle by Nora Lester Murad
Hungry Hearts by Elsie Chapman, Caroline Tung Richmond, Sandhya Menon, et al.

Where to Teach:
Social Studies: Grades 6, 7, 8;
Language Arts: Grades 6, 7, 8 (Wit & Wisdom: Grade 6, 7, 8; HMH: Grade 6; Imagine Learning: Grade 7)

ABOVE: A Wellness In the Schools teaching demo engages students in learning recipes from various cultures.

Food & Identity 1

Explore how different cultures, religions, geographies, and histories shape people's relationships with food

6-8 Explain how food can symbolize culture and history in literature and life.

NYC CORE CURRICULUM CONNECTIONS:

Wit & Wisdom, Grade 6, Module 4 & HMH, Grade 6 Module 2 Students read *I Am Malala: How One Girl Stood Up for Education and Changed the World*, Malala Yousafzai and Patricia McCormick, and could reference the cultural foods mentioned in the story.

HMH, Grade 6, Module 3 Students also read an excerpt from *The Breadwinner* by Deborah Ellis, which could provide an opportunity to compare and contrast food available to Parvana and her family and that of Malala.

Wit & Wisdom, Grade 7, Module 1 Students read T*he Castle Diary: The Journal of Tobias Burgess*,by Richard Platt and *The Midwife's Apprentice* by Karen Cushman, both texts that connect to food during Medieval times.

Wit & Wisdom, Grade 8, Module 1 Students read Kwame Alexander's *The Crossover,* which notes the traditional family meal of fried chicken, collard greens, and candied yams from his Aunt's house (representing a connection to family legacy).

Imagine Learning, Grade 7, Module 1, "The Lost Children of Sudan" Students read *A Long Walk to Water* by Linda Sue Park. Food of the characters' experience and culture could be tied into students' own food experiences - including Salva reminiscing about the celebratory rice and beans when his father would visit, boiled Sorghum eaten by Nya's family, and the various found foods, like yams, sugarcane, and fish and crocodile meat that the children encounter.

Passport to Social Studies, Grade 6, Unit 4, Lesson 8, Geography of Ancient Greece Students analyze maps and secondary sources to understand the geographic forces that shaped ancient Greek civilization, farming in particular

Passport to Social Studies, Grade 7, Unit 1, Lesson 6, The Columbian Exchange Students understand the impact of the Columbian Exchange, including the movement of crops and livestock.

Passport to Social Studies, Grade 8, Unit 2, Lesson 11, The Jungle Students analyze and discuss the negative impact of industrialization on society through a close reading of *The Jungle* by Upton Sinclair

Food & Identity 1

Explore how different cultures, religions, geographies, and histories shape people's relationships with food.

9-12

Identify how cuisines from a variety of regions and cultures evolved over time and determine what factors influenced their evolution (i.e. biological evolution, technological advances, geographical and environmental factors, trade, religion, globalization, availability).

Reflect on and share how food represents aspects of you - your culture, religion, geography, history, or experiences. Find examples of food as symbolism in literature.

What this looks like:

In Biology, explore why certain groups of people are able to digest lactose while others cannot and how that influences what they eat. Also, compare the microbiomes of different groups of people by comparing lifestyle and diet.

In Social Studies, explore how food played a role in the development of civilizations and, later, globalization.

Explore culture through food, both by inviting students to share their own connections to food and inviting in voices from the community, such as through oral history interviews to learn about a specific cultural dish, its origins, and its role in the community.

Find examples of food as symbolism in literature and discuss how and why food is used to represent aspects of identity, culture, and life experience.

NYC Standards Connections:

Life Science
LS3-1, LS3-2, LS4-3, LS4-4, LS4-5

Social Studies Conceptual Understandings (from NYC Scope & Sequence):
9.1, 10.9

Where to Teach:
Biology
Global History
English

Recommended Texts:

The Omnivore's Dilemma (Young Reader's Edition) by Michael Pollan

Gibbons, A. The Evolution of Diet. *National Geographic Magazine.* (Also Recommended in New Visions Biology, Unit 2, Humans v. Bacteria, L3, p.5)

Delicious! A Novel by Ruth Reichl

Food & Identity 1

Explore how different cultures, religions, geographies, and histories shape people's relationships with food

9-12

Identify how cuisines from a variety of regions and cultures evolved over time and determine what factors influenced their evolution (i.e. biological evolution, technological advances, geographical and environmental factors, trade, religion, globalization, availability)

Reflect on and share how food represents aspects of you - your culture, religion, geography, history, or experiences. Find examples of food as symbolism in literature.

NYC CORE CURRICULUM CONNECTIONS:

New Visions Biology Evolution of Sick Humans HS LS 4-1 Common Ancestry Students investigate evolutionary "mismatches" between modern environments and human traits. By analyzing historical evolutionary patterns, they learn that modern environments change too fast for human evolution to keep pace, causing mismatch diseases. Students apply these insights to design school environments that mitigate these health issues.

New Visions Biology Evolution of Sick Humans, Lactase Persistence, Elaborate Lesson Students watch a video on how the structure and function of DNA lends itself to the accumulation of beneficial traits in a population.

NYS Biology Investigation, Unraveling Mystery of Lactose Intolerance - Student Direction, Passage 3 Students model gene inheritance to demonstrate how lactose tolerance varies and spreads across generations. They then use statistical data to calculate and compare lactose tolerance rates between two populations, observing the impact of environmental pressures.

New Visions Biology Humans vs Bacteria HS LS 4-2 The Black Death Students investigate pathogen transmission by studying the Black Death (1346–1353), which killed up to 50% of Europe's population. By exploring why some survived, students learn how immune system variation, nutrition, and hygiene impact pandemic survival.

New Visions Biology Human vs Bacteria, Microbiome Lesson Students explore fecal transplants as a treatment for recurring bacterial infections. They analyze and compare different human microbiomes, discovering that certain groups—such as hunter-gatherers—possess significantly higher bacterial diversity.

Passport to Social Studies, Grade 9, Unit 1, Day 7, Geography and Early Civilizations Students gather information about the location of early civilizations and draw inferences about how the people who lived in these societies may have adapted to and modified their environments to meet their need for food.

Passport to Social Studies, Grade 10, Unit 6, Day 3, Defining Globalization Students understand the food they eat as examples of living in a global world.

HMH Into Literature, Grade 11, Unit 3 "The Individual & Society" This unit includes the poem "In the Season of Change" by Teresa Palomo Acosta, in which the author visions spending time with Emily Dickinson, including sharing a meal of their favorite foods. A nice "in" to having students consider their favorite foods and what those might be of authors or characters they have read.

Food & Identity 2

Learn about where food originated and its role in history.

K-2	**Explain ways that food might originate (indigenous to an area or introduced to an area).**
3-5	**Explain how food access has shaped, and been shaped by, history.**
6-8	**Explain how food can influence the growth or oppression of society.**
9-12	**Explain how food has influenced both growth and oppression of societies across human history.**

EQUITY SPOTLIGHT

- ☀ Recognize that students may relate to experiences of oppression in societies linked to food, such as modern-day food insecurity causing a need for immigration or a family history in a society facing oppression. Be careful of "othering" these experiences or assuming that "we" are not experiencing them.

- ☀ Recognize that students may have faced, or are currently facing, food insecurity. Again, be careful of assuming this is not true. Be mindful of how food insecurity is discussed, being careful not to "other" or isolate students who are facing food insecurity. Any time a resource for food availability is shared, share it broadly with the entire class, rather than offering it to individuals or only those who need it.

Food & Identity 2

Learn about where food originated and its role in history.

K-2

Explain ways that food might originate (native to an area or introduced to an area)

What this looks like: *Read and discuss texts about how foods got to certain areas.*

NYC Standards Connections:

Language Arts
R9, RF4, W4, SL1, SL4

Social Studies
2.6, 2.7

Recommended Texts:

Our Food Grows by Sarah M. White
Eggs, Please by by Cheryl Yau Chepusova
Julie and the Mango Tree by Sade Smith

Where to Teach: Social Studies / Literacy: Grade 2

NYC CORE CURRICULUM CONNECTIONS:

Wit & Wisdom, Grade 2, Module 2 Explores settlers moving into the American West and their impact on indigenous Americans' lives - including their impact on the food system, such as the disappearance of Buffalo and the tale of Johnny Appleseed.

HMH, Grade 2, Module 3, Week 2 Students read *Gingerbread for Liberty!* by Mara Rockliff, the biography of a baker who used his baking to aid in the Revolutionary War.

HMH, Grade 2, Module 5 "Lead the Way" Week 1 Students read *Seed by Seed: The Legend and Legacy of John "Appleseed" Chapman* by Esmé Raji Codell.

HMH, Grade 2, Module 10, "Many Cultures, One World" Texts include *Where on Earth Is My Bagel?* by Frances and Ginger Park in which a little boy in Korea searches for a New York bagel - and in the process, ends up enlisting a local farmer, fisherman, beekeeper, and baker to help him make a bagel from scratch!

Passport to Social Studies, Grade 2, Unit 2, Lesson 2, The First Inhabitants of New York City Students understand that New York City in the 1600s was a different place and was inhabited by various Native American peoples. Food is discussed in terms of survival and also in terms of availability and process to the Munsees of Manahatta.

Passport to Social Studies, Grade 2, Unit 2, Lesson 7, New York City's Use of Natural Resources Over Time Students identify how the use of varied natural resources changed from 1700 to 1900 in New York City. Food is introduced as a natural resources category. Specific animals found in New York City and their use as food is discussed.

Food & Identity 2

Learn about where food originated and its role in history.

3-5

Explain how food access has shaped, and been shaped by, history.

What this looks like: *Discuss how foods featured in texts are influenced by history.*

NYC Standards Connections:

Language Arts
R3, R9, RF4, SL1, W5 (4th & 5th), W7

Social Studies Conceptual Understandings (from NYC Scope & Sequence):
3.3, 3.4, 3.5, 3.6
4.2, 4.3, 4.7
5.3

Recommended Texts:

A Plate of Hope by Erin Frankel
Fry Bread: A Native American Family Story by Kevin Noble
Cora Cooks Pancit by Dorina Lazo Gilmore
Bee-Bim Bop! by Linda Sue Park
The Traveling Taco by Mia Wenjen

Where to Teach:
Social Studies: Grades 3, 4, 5
ELA: Grades 4, 5 (HMH: Grade 5, Wit & Wisdom: Grade 5; Imagine Learning: Grade 4)

LEFT: Students celebrate learning about cucumbers!

Food & Identity 2

Learn about where food originated and its role in history.

3-5

Explain how food access has shaped, and been shaped by, history.

NYC CORE CURRICULUM CONNECTIONS:

Wit & Wisdom, Grade 5, Module 1 Students explore how the American West was taken over by settlers and how that shifted indigenous culture. They read *Thunder Rolling in the Mountains*, in which characters eat food such as antelope, elk, comas roots, and huckleberries, which they hunt, gather, or dry for preservation. The specific foods consumed depend on the season and location, with characters preparing simple meals like raw roots, sun-dried roots mixed with berries into cakes, or antelope cooked on sticks, and leaving food for the elderly and wounded.

HMH Grade 5, Module 4 "Wild West," Week 1 Students read *Explore the Wild West* by Anita Yasuda, about "pioneer" Americans moving West in the 1800s. There is a section on "Trail Food" eaten as covered wagons headed west, such as bacon, ham, rice, dried fruit, coffee, and tea - foods which didn't spoil easily - and wild game.

Imagine Learning, Grade 5, Module 4 "The Impact of Natural Disasters" Students read *Eight Days: the Story of Haiti*, by Edwidge Danticat about a boy trapped for eight days after an earthquake. The main character, Junior, recalls vivid memories to keep hope alive, like that of sweet mangos. Discussion can include the impact on this natural disaster on the food system.

Imagine Learning, Grade 4, Module 2 "Animal Defense Mechanisms" Features *Can You Survive the Wilderness?* Matt Doeden - an interactive text about surviving in various environmental conditions.

Imagine Learning, Grade 4, Module 3 "The American Revolution" Includes readings about Colonists' lives during the Revolution as well as readings like "American Indians and the American Revolution," Colin Galloway. As students explore the loss of indigenous lands and the American Revolution's impact on colonists and indigenous people, they can consider how food changed as a result.

Passport to Social Studies, Grade 3, Egypt Case Study, Lesson 5, Investigation Egyptian Food Students research and take bulleted notes about Egyptian food by examining images and captions.

Passport to Social Studies, Grade 3, Unit 1, Lesson 10, Modifying the Environment Students explain how people modify their environment and infer how these modifications help to support human settlement.

Passport to Social Studies, Grade 4, Unit 2, Lesson 6, Contributions of Native Americans Students analyze primary and secondary source documents to understand and appreciate the contributions of Native Americans including specific foods and processes related to farming and food.

Passport to Social Studies, Grade 4, Unit 3, Lesson 2, Geography of the Thirteen Colonies and New York Students learn about early New York's development and establishment as an emerging center of commerce by analyzing geographical features and identifying natural resources

Passport to Social Studies, Grade 4, Unit 3, Lesson 5, Dutch Legacy in New York Students examine important Dutch contributions to the growth and development of New York including food and culture

Passport to Social Studies, Grade 5, Unit 2, Lesson 8, The Columbian Exchange Students recognize what happens when different cultures interact, including the exchange of food, crops, and wildlife that result from interactions

Food & Identity 2

Learn about where food originated and its role in history.

6-8

Explain how food can influence the growth or oppression of society.

What this looks like:

In reading literary nonfiction / historical fiction texts with social studies connections, identify foods mentioned and how they are linked to the growth or oppression of the society.

NYC Standards Connections:

Language Arts
R4, R6, SL1

Social Studies Conceptual Understandings (from NYC Scope & Sequence):
6.5, 6.3, 7.1, 7.2, 7.8, 8.1

Science
MS-PS1-3, MS-LS1-6, MS-LS4-1, MS-LS4-4, MS-LS4-6

Recommended Texts:

Weslandia by Paul Fleichman
The Good Garden by Katie Smith Milway
The Antiracist Kitchen by Nadia L. Hohn

Where to Teach:
Social Studies: Grades 6, 7, 8;
ELA: Grades 7, 8 (HMH: Grade 8, Wit & Wisdom: Grade 7; Imagine Learning: Grade 8)

RIGHT: Students touring a community garden.

Food & Identity 2

Learn about where food originated and its role in history.

6-8 Explain how food can influence the growth or oppression of society.

NYC CORE CURRICULUM CONNECTIONS:

Wit & Wisdom, Grade 7, Module 2 and **Imagine Learning, Grade 8, Module 4, "Lessons from Japanese American Internment"** Students read *Farewell to Manzanar* by Jeanne Wakatsuki Houston and James D. Houston and study Japanese internment camps. In the text, food is a symbol of oppression, as the meals served in the camps are often canned, bland food - like canned apricots with rice - and those contrast greatly to the meals the main character Jeanne had experienced in her life before the camp, such as grilling grunion fish with soy sauce on the beach. In addition, camp life broke down Japanese traditions of people eating together.

HMH, Grade 8 Unit 3, "Places we Call Home" includes long read choices that could support this standard - *Enrique's Journey* Adapted for Young People by Sonia Nazario, the real story of a Honduran boy's years of difficulty living apart from his mother after immigrating to the US and his perilous journeys to try to make it to the US; *Inside Out and Back Again* by Thanhhà Lai, a novel in verse about a family's journey to fleeing war-era Vietnam: across the sea, to a refugee camp, and finally to adapt to life in the US; *Lion Island: Cuba's Warrior of Words*, a novel in verse by Margarita Engle about a family whose vegetable store is impacted by drought and forces the family to become refugees in Cuba; *The Latehomecomer*, a memoir by Kao Kalia Yang about a Hmong girl born in a refugee camp in Thailand who eventually immigrates to the US; *Refugee* by Alan Gratz, about three refugee children's journeys: a Jewish boy fleeing Nazi Germany, a girl whose family flees Cuba under Fidel Castro, and a Syrian boy fleeing civil war. Food insecurity and forced adaptation to foods outside of culture and comfort play a role in each of these novels.

Passport to Social Studies, Grade 6, Unit 2, Lesson 1, Introduction to Timelines Students consider points in human history as they create a timeline, including the beginning of cooking by fire and when humans began to grow their own food.

Passport to Social Studies, Grade 6, Unit 2, Lesson 7, Stone Age Technology Students analyze the development of tools and technology to understand human progress including related to food and eating.

Passport to Social Studies, Grade 6, Unit 2, Lesson 8, The Neolithic Revolution: From Hunters-Gatherers to Farmers Students learn how human societies transformed from hunter-gatherer groups into agricultural communities.

Passport to Social Studies, Grade 7, Unit 1, Lesson 6, The Columbian Exchange Students understand the impact of the Columbian Exchange, including the movement of crops and livestock.

Passport to Social Studies, Grade 7, Unit 5, Lesson 3, Slave Life Students analyze narratives and primary source images to explore life on a plantation, including the reality that the overwhelming majority of people enslaved on plantations worked as field hands, taking care of all that was involved in growing and harvesting cash crops.

Passport to Social Studies, Grade 8, Unit 1, Lesson 8, Reconstruction and African Americans Students use primary sources to analyze and evaluate the extent to which Reconstruction policies and events impacted life for African Americans, including the sharecropping system.

SCALE Science 7 Unit 2, Task 1, Explosions in the Human Population Students analyze a graph on population size and big technology periods, encouraging connections between food availability in different time periods and the methods by which food is collected, harvested, produced, etc. Includes hunter-gatherers, agricultural revolution, and green revolution.

SCALE Science, Grade 8, Unit 4, Task 5 Right, Wrong, and In-between Students review a case study on the Food Crisis in Zambia, Designer Babies, and argue for or against GMOs.

Food & Identity 2

Learn about where food originated and its role in history.

9-12 Explain how food has influenced both growth and oppression of societies across human history.

What this looks like: *In Global History, learn about how food production developed across different societies and discuss the impact of these approaches to peoples' relationships with food. In Biology, delve into the Pellagra epidemic to understand the relationship between food production, diet, illness, and oppression.*

NYC Standards Connections:

Social Studies
9.1, 9.8, 9.10

Science Standards:
HS-LS2-1

Recommended Texts:

A Pho Love Story by Loan Le
All Over Creation by Ruth Ozeki
A Cuban Girl's Guide to Tea and Tomorrow by Lisa Taylor Namey
Bite by Bite by Marc Aronson and Paul Freedman
Excerpts from Braiding Sweetgrass (incl. retelling of "Skywoman" and The Gift Economy" chapter)
New Visions Biology Food For All Student Handout
- A Medical Mystery (p. 4-5)
- Goldberg's Investigation (p. 64-70)
- Pellagra Text (p. 75-76)
- Decomposition Text (p. 86-87)
- Inequity of Pellagra (p. 100-101)
- Agricultural Practices in SE US (p. 103-108)

Where to Teach:
Social Studies: Grade 9; Literacy (HMH: Grade 11); HS Biology

NYC CORE CURRICULUM CONNECTIONS:

HMH Into Literature, Grade 11, Unit 1 "Foundations & Encounters" Includes "The World on the Turtle's Back", an Iroquois myth, versions of which are centered in many Indigenous cultures. The same story is included in *Braiding Sweetgrass*, which can be used as a parallel text and connection to this standard.

HMH Into Literature, Grade 11, Unit 4 "The Quest for Freedom" includes the poem "Imagine the Angels of Bread" by Martín Espada, which presents a vision for social justice utilizing images of historically oppressed peoples rising against their oppressors alongside modern-day life, with references to farm workers, food systems workers, and enslaved people. This presents a strong connection to justice issues and oppression in the food system.

Food & Identity 2

Learn about where food originated and its role in history.

9-12

Explain how food has influenced both growth and oppression of societies across human history.

NYC CORE CURRICULUM CONNECTIONS:

Passport to Social Studies, Grade 9, Unit 1, Day 7, Geography and Early Civilizations Students gather information about the location of early civilizations and draw inferences about how the people who lived in these societies may have adapted to and modified their environments to meet their need for food.

Passport to Social Studies, Grade 9, Unit 5, Days 15-16, Innovation in the Inca Empire Students understand the Inca Empire's technological innovations, including those around food and food processes.

Passport to Social Studies, Grade 9, Unit 6, Day 11, Sugar Changed the World Students understand the relationship between sugar production and slavery in the Americas.

Passport to Social Studies, Grade 9, Unit 6, Day 12, Columbian Exchange Students evaluate changes that occurred as a result of the Columbian exchange.

New Visions Biology, Food For All Students explore the 1900s Southern pellagra outbreak by tracking corn history and processing. They examine how relying on processed corn caused niacin deficiencies in low-income communities, studying cell biology to see why this vitamin matters. After discovering how Indigenous cooking kept corn nutritious, students connect past food inequities to modern food deserts and brainstorm ways to improve local food access.

New Visions Biology, Food For All Supplementary Video: History The Story Of All of Us Corn

ABOVE: High school students extend classroom learning to hands-on experiences in the garden.

Food & Identity 3

Build a respect for the various reasons people might eat or avoid certain foods.

K-2	***Don't 'yuck' another person's 'yum*. Understand that people may share or have different tastes in food.**[3]
3-5	**Identify reasons individuals might eat or avoid certain foods based on needs (i.e. allergies, medical conditions, physical activity), preferences (likes/dislikes), traditions (religion, culture, family/ upbringing).**
6-8	**Understand others' food choices based on needs, culture, and preferences and explain how these behaviors influence health and wellbeing.**
9-12	**Identify multiple factors that determine the different nutrition behaviors individuals and communities adopt and evaluate which of these behaviors may be beneficial and harmful and in what ways.**

EQUITY SPOTLIGHT

- Be careful not to "other" students who share different traditions or have different preferences than your own.
- Recognize that allergies are serious, as are food-related medical conditions. Never require a student to disclose a reason that they do not eat certain foods or do not partake in classroom food sampling activities as it could be related to a personal medical condition they do not wish to share.
- Note that some students fast in relation to religious holidays, such as Muslims fasting during Ramadan, or do not eat certain foods due to religious beliefs.
- It can be useful to send food survey to caregivers in advance of any in-class eating to understand students' dietary needs, including allergies, religious observations, and other family preferences so that students are not inadvertently fed something that goes against their belief system or dietary needs.

[3] Inspired by Center for Ecoliteracy. (2014). *Big ideas: A new alignment with academic standards*, Culture K-2

Food & Identity 3

Build a respect for the various reasons people might eat or avoid certain foods.

K-2

***Don't 'yuck' another person's 'yum'*. Understand that people may share or have different tastes in food.**[4]

What this looks like:

Morning Meeting sharing of the school lunch menu for the day and regular discussions of how different people have different likes - and what it means to "not 'yuck' another person's 'yum'"! Students interviewing each other about favorite foods and drawing/writing/talking about a peer's favorites. Social Studies lessons and discussions about ways that people are alike and different, and lessons about how unique and shared cultures developed.

NYC Standards Connections:

Social Studies:
K.4, K.1, K.2, K.3, K.8, K.9, 1.1

Recommended Texts:

Thank You, Omu! by Oge Mora
No Kimchi for Me! by Aram Kim
Emeka, Eat, Egusi! by Candice Iloh
What's Your Favorite Food? by Eric Carle et. al.

Where to Teach:
Social Studies: Grades K, 1

NYC CORE CURRICULUM CONNECTIONS:

Passport to Social Studies, Grade K, Unit 1, Lesson 4, Classroom Communities are Diverse Students compare and contrast similarities and differences of classroom community members. Prompts include similarities around food and how food preferences can make us special or unique.

Passport to Social Studies, Grade K, Unit 2, Lesson 1, We Are the Same, We Are Different Students understand that certain attributes make them unique; all people share similarities as well as exhibit differences. Discussion includes various ways people can be similar or different including foods we eat. Students are prompted to share favorite foods.

Passport to Social Studies, Grade K, Unit 2, Lesson 4, Our Culture Makes Us Unique Students learn that people of the same culture share beliefs, traditions, religions, and holidays. Discussion prompts include, What are some examples of cultural foods?, What are some foods your family enjoys eating and that reflect your culture?

Passport to Social Studies, Grade K, Unit 4, Lesson 5, Family Traditions Students explore the various ways that families develop traditions and pass them down from one generation to the next. Students learn the importance of traditions in preserving family history, culture, values, and beliefs.

Passport to Social Studies, Grade K, Unit 4, Lesson 6, Family Celebrations Students compare and contrast ways that family celebrations are alike and different.

Passport to Social Studies, Grade 1, Unit 1, Lesson 7, Traditions Students identify family traditions and understand how traditions represent families' customs, background, or history. Discussion, shared text, and activity involve food as a part of family tradition

[4] Inspired by Center for Ecoliteracy. (2014). *Big ideas: A new alignment with academic standards*, Culture K-2

Food & Identity 3

Build a respect for the various reasons people might eat or avoid certain foods.

3-5

Identify reasons individuals might eat or avoid certain foods based on needs (i.e. allergies, medical conditions, physical activity), preferences (likes/dislikes), traditions (religion, culture, family/ upbringing).

What this looks like: *Discussion in Morning Meeting or Advisory about food allergies; Health Class lessons on why people might need different amounts of food based on different factors; Sharing school lunch menus in Morning Meeting or Advisory and discussing preferences and connections to personal traditions*

NYC Standards Connections:

Health:
NPA 2.2

Recommended Texts:

Lunch from Home by Joshua David Stein
Miss Betti, What is This? By Lela Nargi
Why Doesn't Everyone Eat Meat? By Jennifer Boothroyd
What's Your Favorite Food? by Eric Carle et. al.
Following Special Diets by Beth Bence Reinke, MS, RD

Where to Teach: Advisory, Morning Meeting, Health

NYC CORE CURRICULUM CONNECTIONS:

HealthSmart, Grade 3, L21 "Food Choices & Influences" Students consider their favorite foods and how these selections were informed by outside influences - specifically thinking about how family, friends, advertising, and media influence food choices. (Also I&E4)

In Art Class, read *What's Your Favorite Food?* by Eric Carle and others, featuring author/illustrators writing about and illustrating their favorite foods. Invite students to write about and illustrate their favorite food!

ABOVE: Students learn to prepare foods in the classroom.

Food & Identity 3

Build a respect for the various reasons people might eat or avoid certain foods.

6-8

Understand others' food choices based on needs, culture, and preferences and explain how these behaviors influence health and wellbeing.

What this looks like: *Sharing personal stories and connections to food choices in Health Class or Advisory, with an emphasis on sharing any specific food needs, cultural food connections, or food preferences - and inviting students to link this to their own health and wellbeing.*

NYC Standards Connections:

Health:
NTR 1.6

Recommended Texts:

A Place at the Table by Saadi Faruqi
Measuring Up by Lily LaMotte

Where to Teach: Advisory, Morning Meeting, Health

NYC CORE CURRICULUM CONNECTIONS:

HealthSmart, MS, L9 "What Influences my Food Choices?" Students brainstorm influences on their food choices and discuss how different influences, including family and friends, can be positive or negative. (Also I&E)

ABOVE: Middle schoolers contribute favorite ingredients to a shared salad.

Food & Identity 3

Build a respect for the various reasons people might eat or avoid certain foods.

9-12

Identify multiple factors that determine the different nutrition behaviors individuals and communities adopt and evaluate which of these behaviors may be beneficial and harmful and in what ways.

What this looks like: *Biology investigations explore the genetic factors behind impacts of certain foods on the body, like lactose intolerance or leptin resistance (in New Visions Biology "The Evolution of Sick Humans"), and how lifestyle (such as tenant farming in the post-Civil War South) impacted nutrition (in New Visions Biology "Food for All").*

NYC Standards Connections:

Biology
HS-LS3-1, HS-LS1-1

Recommended Texts:

Ultra-Processed People by Chris van Tulleke
Notes From a Young Black Chef (Adapted for Young Adults) by Kwame Onwuachi & Joshua David Stein - Excerpts from Chapter 3 (Dominoes)

Where to Teach: Biology

NYC CORE CURRICULUM CONNECTIONS:

New Visions Biology, Evolution of Sick Humans, Unit Opening Students read a text in order to tell the story of a young girl who eats a NYC school lunch and then runs into digestive problems because of the high dairy content.

New Visions Biology, Evolution of Sick Humans, Lactase Persistence 5E, Why are some people able to digest dairy into adulthood but others cannot? Students explore geographic patterns in lactose intolerance and conduct scientific investigations to look at how milk works in the digestive systems of people with different DNA. They also explore the role leptin plays in fat storage to unpack the relationship between body fat and leptin in the blood, and look at how varieties in the leptin gene and resultant leptin resistance may impact fat storage. They apply their understanding to diabetes. Finally, students consider "*How could we design a school so that everyone, including those that stop producing lactase or do not produce lactase anymore, is healthy and wellnourished?*"

New Visions Biology, Evolution of Sick Humans, Unit Opening, LO Bundle notes: "Not all students may be familiar with or connect to the concept that a person can't drink milk without getting sick, or even that not all cultures include dairy as a usual lunch time food. Prompt students to think about other types of foods or activities that only some people (not everyone) have difficulty with or do not partake in because it is not a usual part of their culture. Students may discuss allergies to foods, or cultural/religious/environmental differences or preferences between different countries or geographic locations." (p. 3)

Where Food Comes From

Our food system is the complex process of food going from its source to our plates.

Students will:

1. Understand how food is grown, raised, and harvested.
2. Understand how and why food is processed.
3. Understand the steps that food takes to get from source to table, and the roles that people & technology play throughout the process.
4. Understand how to prepare food.

Where Food Comes From 1

Understand how food is grown, raised, and harvested.

K-2	**Identify common foods that come from specific plants and animals on farms (including eggs, meat, fruits, vegetables).**
3-5	**Explain how various foods are grown/raised and harvested.**
6-8	**Understand how crops and animals are grown and raised through different food production systems, such as organic, sustainable, and conventional farms, hydroponic systems, and gardens.**
9-12	**Analyze the complexities of the science of growing and producing food, and consider economics, environmental costs and benefits, public health implications, animal welfare, and personal views in relation to various food production systems.**[5]

EQUITY SPOTLIGHT

- ☀ Recognize that many students have never visited or seen a farm so may be unaware of farm features or vocabulary. Young students may not have read children's books about farms or have a concept of a farm.
- ☀ Recognize that students do not all have access to fresh farm-sourced food in their lives outside of school, nor do students all have agency to choose their own food. Be careful of defining food choices or types of food as "bad", as you may be labeling the only food a student has access to outside of school. Instead, teach the facts about various types of food production and food systems, giving students tools to make informed choices later in their lives without alienating their food options now.
- ☀ Highlight farm-sourced foods or locally grown foods that are available on the cafeteria menus, including NY State apples, carrots, and milk products.

[5] Inspired by Center for Ecoliteracy. (2014). *Big ideas: A new alignment with academic standards*, 9-12.

Where Food Comes From 1

Understand how food is grown, raised, and harvested.

K-2

Identify common foods that come from specific plants and animals on farms (including eggs, meat, fruits, vegetables).

What this looks like: *Identify fruits and vegetables in literature and discuss different fruits and vegetables offered at school and (where possible!) edible plants grown in the school garden.*

NYC Standards Connections:

Science
K-LS1-1, K-ESS2-2, K-ESS3-1

Language Arts
R9, RF4, W4, SL1, SL4

Recommended Texts:

See What We Eat! by Scot Ritche
Sylvia's Spinach by Katherine Pryor
Plants Feed Me by Lizzy Rockwell
Maple Syrup from the Sugarhouse by Laurie Lazzaro Knowlton
From Seed to Plant by Gail Gibbons
Edible Colors by Jennifer Vogel Bass
Up in the Garden and Down in the Dirt by Kate Messner
Who Put the Cookies in the Cookie Jar? by George Shannon
Seed to Plant by Kristen Baird Rattini

Where to Teach:
ELA: Grades K-2 (HMH: Grades K, 1; Imagine Learning: Grade 2); Science: Grade K (Amplify)

ABOVE: Elementary teachers get creative with a simulated salad bar!

Where Food Comes From 1

Understand how food is grown, raised, and harvested.

K-2

Identify common foods that come from specific plants and animals on farms (including eggs, meat, fruits, vegetables).

NYC CORE CURRICULUM CONNECTIONS:

Wit & Wisdom, Grade K, Unit 2, "What is true about real farm animals?" Includes informational picture books about farm animals: *Farm Animals* by Wade Cooper, *The Year at Maple Hill Farm* by Alice and Martin Provensen as well as "The Cornell Farm," a painting by Edward Hicks (http://witeng.link/0179) and the song "Old MacDonald Had a Farm" (http://witeng.link/0034). Students write a story using Maple Hill Farm as the "where" or setting of their story and choosing a season for the story to take place.

HMH, Grade K, Module 4, "Happy Healthy Me" Text includes *Edible Colors* by Jennifer Vogel Bass about different colors of vegetables we eat. Module 8 "From Plant to Plate", Students read *Up in the Garden and Down in the Dirt* by Kate Messner and *Earthworms* by Lisa J. Amstutz. These texts look at what happens below and above ground to grow the food we eat. Other texts include *Plants Feed Me* by Lizzy Rockwell which details the parts of a plant that we eat and *Planting Seeds* by Kathryn Clay,

HMH, Grade 1, Module 2 "My Family, My Community", Week 3 "Who Put the Cookies in the Cookie Jar?" Students read *Who Put the Cookies in the Cookie Jar?* by George Shannon. The text looks at how many hands make the cookies that are in the cookie jar - from the farmers to the bakers to hands that make the cookie sheets and oven mitts. Ingredients like milk, butter, flour, eggs, and sugar are shown and their sources.

HMH, Grade 1, Module 9, "Grow, Plants, Grow" Texts include *Which Part Do We Eat?* by Katherine Ayres, and *The Talking Vegetables* by Won-Ldy Paye and Margaret H. Lippert, *A Year in the Garden* by Brad Hieber

Imagine Learning, Grade 2, Module 3 "Plants & Pollinators" Texts include *From Seed to Plant* by Gail Gibbons and *Seed to Plant* by Kristin Baird Rattini. Additional texts from the selections above may support further connecting not only how pollinators support plants' growth and reproduction, but also how they ensure plants can grow fruits - and feed us!

Amplify, Grade K, "Needs of Plants & Animals" Students plant radishes, garlic, and sunflowers as they explore what plants need to grow. This can connect to where our food comes from, particularly focusing on vegetables.

ABOVE: Students see growing in action!

Where Food Comes From 1

Understand how food is grown, raised, and harvested.

3-5 Explain how various foods are grown/raised and harvested.

What this looks like: *Identify excerpts from literature that depict food being grown/raised and harvested. Discuss how those foods are grown and what it takes to grow them. When possible, connect these texts to experiences in the school garden. Have students write their own story of an ingredient going from seed to plate*

NYC Standards Connections:

Social Studies
3.3, 3.6, 3.9, 4.2, 4.3, 4.6, 4.7, 5.1, 5.4, 5.3

Language Arts
R3, R9, RF4, SL1, W5 (4th & 5th), W7

Recommended Texts:

Before We Eat: From Farm to Table by Pat Brisson
Outdoor Farm, Indoor Farm by Lindsay H. Metcalf
The Farm that Feeds Us by Nancy Castaldo
The Way of the Hive by Jay Hosler
Food for the Future: Sustainable Farms Around the World by Mia Wenjen

Where to Teach:
Social Studies: Grades 3, 4, 5; ELA: Grades 4, 5 (Wit & Wisdom: 4; HMH: 5)

ABOVE: Students see ingredients starting to sprout in their school garden.

Where Food Comes From 1

Understand how food is grown, raised, and harvested.

3-5 Explain how various foods are grown/raised and harvested.

NYC CORE CURRICULUM CONNECTIONS:

Wit & Wisdom, Grade 4, Module 2 Students read *Hatchet* by Gary Paulsen. In *Hatchet*, a young boy, Brian has to survive alone in the wilderness after a plane crash. He survives by foraging for food (including berries), hunting, and fishing - and even figuring out how to "make" fire. This can be connected to conversation around where food comes from with a simple conversation about where food in the cafeteria comes from in contrast to where Brian's food comes from.

HMH, Grade 5, Module 5, "Project Earth" Week 1 Students read "Potatoes on Rooftops: Farming in the City" by Hadley Dyer, which talks about urban farming and its history. It includes sections on Victory Gardens developed during World War II, and pieces about vertical gardens, tower farms, an underground hydroponic farm in Tokyo, and rooftop farms. It also mentions considerations for designing an urban garden, including sunlight, vegetable preference, seasons, and pests. Soil testing in urban areas, community gardens, and the benefits of local food are all addressed. Even the physical benefits of gardening make an appearance!

HMH, Grade 5, Module 2, "What a Story," Week 2 Students read a short play, "The Miracle of Spring" by Helen Hanna, about how King Bartholomew's ban of Spring leads him to realize that he has disrespected Mother Nature, upset the seasons, and destroyed the food supply. The characters - including animals, plants, and seasons, teach him how food grows and how the world needs the seasons.

Passport to Social Studies, Grade 3, Unit 1, Lesson 10, Modifying the Environment Students explain how people modify their environment and infer how these modifications help to support human settlement.

Passport to Social Studies, Grade 3, Nigeria Case Study, Lesson 4, Nigerian Marketplace Students gain a basic understanding of Nigeria's natural resources by simulating a Nigerian marketplace and learning how Nigerians use these resources and exchange them for other items they may want or need.

Passport to Social Studies, Grade 4, Unit 2, Lesson 6, Contributions of Native Americans Students analyze primary and secondary source documents to understand and appreciate the contributions of Native Americans including specific foods and processes related to farming and food.

Passport to Social Studies, Grade 5, Mexico Case Study, Lesson 8, GMO Corn in Mexico Students examine the impact that genetically modified corn and trading have had on Mexico's economy

Where Food Comes From 1

Understand how food is grown, raised, and harvested.

6-8

Understand how crops and animals are grown and raised through different food production systems, such as organic, sustainable, and conventional farms, hydroponic systems, and gardens.

What this looks like:

Read both realistic fiction and literary nonfiction, as well as nonfiction articles, to learn about how food is grown in the United States and beyond, and analyze these practices with a critical eye and using evidence to support opinions.

NYC Standards Connections:

Science
MS-ESS3-3, MS-LS1-6, MS-LS1-7, MS-LS1-4, MS-LS1-5, MS-LS3-1, MS-LS3-2

Social Studies
6.5, 7.8, 8.1

Language Arts
R1, R8, SL1

Recommended Texts:

Bite by Bite by Marc Aronson, Paul Freedman, Frederick Douglass Opie, Amanda Palacios, Tatum Willis and David Zheng
The Omnivore's Dilemma (Young Readers Edition) by Michael Pollan

Where to Teach:
Social Studies: 6, 7, 8; ELA: 7, 8 (HMH: Grade 7; Imagine Learning: Grade 8)

LEFT: indoor grow systems, like hydroponics, offer opportunities for gardening throughout the year and when outdoor garden space is not available.

Where Food Comes From 1

Understand how food is grown, raised, and harvested.

6-8

Understand how crops and animals are grown and raised through different food production systems, such as organic, sustainable, and conventional farms, hydroponic systems, and gardens.

NYC CORE CURRICULUM CONNECTIONS:

SCALE, Grade 7, Unit 2 Mimicking Nature's Design The culminating project is students designing an aquaponic growing system.

SCALE, Grade 8 Unit 4, Task 4, Human Intervention, Genetic Engineering vs Selecting Breeding to produce food. Here students learn about how human intervention led to changes of species (food) over time.

HMH, Grade 7, "Inspired by Nature" includes a number of short pieces that can be related to farming methods and practices: "The Drought," a poem by Amy Helfrich showing a farmer walking his drought stricken fields; "Allied with Green" by Naomi Shahib Nye, in which the narrator explores her feelings about "green" for a "What I Believe In" paper - and goes into the green of her family's gardens, feelings on drought and concrete jungles, and what it takes to raise plants; "Never Retreat" from *Eyes Wide Open* by Paul Fleischman which explores the challenges of oil and unsustainable fuel on American life - and what a shift away from fossil fuels would take. Fleishman notes agriculture's dependence on fossil fuels throughout.

Imagine Learning, Grade 8, Module 2, "Food Choices" Students read *The Omnivore's Dilemma* and consider "Where does our food come from? How do we analyze arguments about how food should be grown and processed?"

Passport to Social Studies, Grade 6, Unit 4, Lesson 8, Geography of Ancient Greece Students analyze maps and secondary sources to understand the geographic forces that shaped ancient Greek civilization, farming in particular.

Passport to Social Studies, Grade 7, Unit 5, Lesson 3, Slave Life Students analyze slave narratives and primary source images to explore life on a plantation, including the reality that the overwhelming majority of people enslaved on plantations worked as field hands, taking care of all that was involved in the growing and harvesting of cash crops.

Passport to Social Studies, Grade 8, Unit 1, Lesson 8, Reconstruction and African Americans Students use primary sources to analyze and evaluate the extent to which Reconstruction policies and events impacted life for African Americans. Students learn about the sharecropping system.

Amplify Science, Grade 7, "Earth's Changing Climate Engineering Internship: Rooftops for Sustainable Cities" Though this unit is not directly related to farming, it is a prime opportunity to connect to rooftop farm innovations and consider ways that rooftops can support sustainable cities

EQUITY SPOTLIGHT

☀ When discussing slavery, refer to "enslaved people" rather than "slaves," highlighting that this status was imposed upon people, not a chosen part of one's identity.

Where Food Comes From 1

Understand how food is grown, raised, and harvested.

9-12

Analyze the complexities of the science of growing and producing food, and consider economics, environmental costs and benefits, public health implications, animal welfare, and personal views in relation to various food production systems.[6]

What this looks like: *Compare and contrast agricultural practices from a scientific perspective (in Biology) and analyze the social, environmental, and economic implications of various food production systems.*

NYC Standards Connections:

Science
HS-LS2-1, HS-LS1-5, HS-LS2-4, HS-LS2-3, HS-LS1-6

Recommended Texts:

Animal, Vegetable, Miracle by Barbara Kingsolver
Chew on This by Charles Wilson and Eric Schosser
Eating Animals by Jonathan Safran Foer
How the World Eats by Julian Baggini

Where to Teach: Biology

NYC CORE CURRICULUM CONNECTIONS:

New Visions Biology, Unit 5, Food For All, L4 Food For Plants One of the assessment tools in this unit that includes looking at food production methods is a class consensus discussion and summary task related to the question "How do Agricultural Practices Impact Crops?" - a strong opportunity to gauge student understanding of how food is grown and harvested.

New Visions Biology, Unit 5, Food For All In this unit, students compare and contrast agricultural practices, such as monocultures and crop rotation, considering how these approaches impact quality of food production.

New Visions Biology, Food For All, Unit Closing
Students explore different types of farming innovations, including aquaponics, vertical farming, and rooftop farms, as they consider what innovation could provide access to fresh food, even in cities. Videos include:
Aquaponics:
NYC's Biggest Outdoor Aquaponic Farm | Serious Eats
AQUAPONICS Animated Introduction part1
Rooftop Farms:
The Farm at the Javits Center - Brooklyn Grange
FoodService Director
Vertical Farming:
Growing Up: How Vertical Farming Works

New Visions Biology, Unit 2, Humans vs Bacteria, Antibiotics Resistance Explain lesson As students watch the Antibiotic Use in Agriculture film, they evaluate the claim: "The overuse of antibiotics in agriculture has caused antibiotic resistance."

[6] Inspired by Center for Ecoliteracy. (2014). *Big ideas: A new alignment with academic standards*, Food 9-12.

Where Food Comes From 2

Understand how and why food is processed.

K-2	**Identify parts of a plant that are eaten on their own, and ones that are made into ingredients for cooking.**
3-5	**Describe different parts of plants we eat and different ways produce can be prepared (eaten fresh, cooked, industrially processed) - and consider the pros and cons of different methods.**
6-8	**Identify how foods are processed and why, and explain the effects different types of food processing has on food.**
9-12	**Describe different reasons that foods are processed and the pros and cons of food processing, including effect on food quality, food safety, nutrient content, the environment, and the economy.**[7]

EQUITY SPOTLIGHT

☀ Recognize that for some students, processed foods may form the vast majority of foods that they can access outside of school food, or may have personal significance in their lives (i.e. a celebratory treat from a parent is a processed treat or a soda). Be careful not to make conversations accusatory toward students or to shame students who eat processed foods. Instead, approach by teaching a more factual understanding of food processing without telling students "you should not eat…" or that eating a specific processed food is "bad." This way, you are giving students the tools to make their own choices in their futures without creating guilt or shame over what they are able to access now.

[7] Adapted from UC Davis Center for Nutrition in Schools. (n.d.). *Nutrition education competencies*, 9-12.

Where Food Comes From 2

Understand how and why food is processed.

K-2

Identify parts of a plant that are eaten on their own, and ones that are made into ingredients for cooking.

What this looks like: *Read texts that show where food comes from and trace the steps that food takes to get from source to plate. Make connections by identifying where different ingredients in the school lunch come from (i.e. apple is the fruit of a tree; pizza includes tomato sauce that comes from tomatoes, crust that comes from wheat, cheese that comes from cows)*

NYC Standards Connections:

Language Arts
R9, RF4, W4, SL1, SL4

Recommended Texts:
Plants Feed Me by Lizzy Rockwel
Our Little Kitchen by Jillian Tamaki
PB & J Hooray! by Janet Nolan
The Vegetables We Eat by Gail Gibbons
Three Hens and a Peacock by Lester L. Laminack
Time for Cranberries by Lisl H. Detlefssen
Who Put the Cookies in the Cookie Jar? by George Shannon
Fruit Bowl by Mark Hoffman

Where to Teach: ELA (Wit & Wisdom: Grade 2; HMH: Grades K, 1, 2)

NYC CORE CURRICULUM CONNECTIONS:

Wit & Wisdom, Grade 2, Module 4 Students read the text *The Vegetables We Eat*, on various vegetables and how they are grown. Students then write an informative paragraph using transition words to sequence and describe the steps of growing food on a large farm.

HMH, Grade K, Module 8, "From Plant to Plate" Readaloud *PB & J Hooray!* by Janet Nolan, which traces a PB & J sandwich from the plate to the source (with all the steps in between) and *Growing Vegetable Soup* by Lois Ehlert (growing the ingredients for the soup).

HMH, Grade 1, Module 2, "My Family, My Community", Week 3 "Who Put the Cookies in the Cookie Jar?" Students read *Who Put the Cookies in the Cookie Jar?* by George Shannon. The text looks at how many hands make the cookies that are in the cookie jar - from the farmers to the bakers to hands that make the cookie sheets and oven mitts. Ingredients like milk, butter, flour, eggs, and sugar are shown and their sources, including the farmers.

HMH, Grade 1, Module 9, "Grow, Plants, Grow" Students read *So You Want to Grow a Taco* by Bridget Heos.

HMH, Grade 2, Module 3, "Meet in the Middle" In Week 2, students Read *Three Hens and a Peacock* by Lester L. Laminack - a peacock moves into a farm, much to the chickens' dismay, so they decide to try to switch places - and learn their place on the farm. While this isn't an in-depth farm text, it does show the role of different animals on the farm, and there is a scene at a farmer's market. In Week 3, students read *Serious Farm* by Tim Egan, in which the animals on a farm try to convince the farmer to have some fun. While the content again isn't about farming in-depth, it does show a farm and animals on the farm, which can be food for conversation.

HMH, Grade 2, Module 10, "Many Cultures, One World" Includes *Time for Cranberries* by Lisl H. Detlefsen, in which a little boy is finally old enough to help his family grow and harvest cranberries.

Where Food Comes From 2

Understand how and why food is processed.

3-5

Describe different parts of plants we eat and different ways produce can be prepared (eaten fresh, cooked, industrially processed) - and consider the pros and cons of different methods.

What this looks like:

Read texts in which different types of foods are consumed and discuss how the produce was prepared. Consider the effects of different types of preparation (i.e. foods that have to be cooked and cannot be eaten raw, etc.). Read nonfiction texts about various food processes (i.e. cooking, pickling, fermenting, industrially processing) and discuss the pros and cons of each.

NYC Standards Connections:

Language Arts
R3, R9, RF4, SL1, W5, W7

Recommended Texts:

The World that Feeds Us by Nancy Castaldo
The Farm that Feeds Us by Nancy Castaldo
Tomatoes on Trial by Lindsay H. Metcalf
Plant, Eat, Cook! by Joe Archer and Caroline Craig
How to Grow Tomato Ketchup by Alix Wood
There is No Such Thing as Vegetables by Kyle Lukoff

Where to Teach: ELA: Grades 4, 5 (Wit & Wisdom: Grades 4, 5)

NYC CORE CURRICULUM CONNECTIONS:

Wit & Wisdom, Grade 4, Module 2 Students read *Hatchet* by Gary Paulsen. Brian gets sick after eating foraged choke cherries - connect to need for processing food (as well as Brian having to cook the food he hunts for and fishes)

Wit & Wisdom, Grade 5, Module 1 Students explore how the American West was taken over by settlers and how that shifted indigenous culture. They read the novel *Thunder Rolling in the Mountain*s, in which characters eat food such as antelope, elk, comas roots, and huckleberries, which they hunt, gather, or dry for preservation. The specific foods consumed depend on the season and location, with characters preparing simple meals like raw roots, sun-dried roots mixed with berries into cakes, or antelope cooked on sticks, and even leaving some food for the elderly and wounded.

EQUITY SPOTLIGHT

- ☀ Recognize that some students of this age typically are not the food sourcers for their family, nor do they have agency to choose their meals or purchasing power to make change in their diets. With this in mind, keep focus on learning about processing - without value judgements alongside the pros and cons. While there is certainly evidence that highly processed foods can be less nutritious for a number of reasons, it is more nuanced than a blanket labeling of “healthy v. unhealthy” and the systemic issues that bar access to fresh, organic produce can be unpacked at later grades.

Where Food Comes From 2

Understand how and why food is processed.

6-8

Identify how foods are processed and why, and explain the effects different types of food processing has on food.

What this looks like: *Read informational texts that connect to food processing and analyze the impact of food processing (including additives, preservation ingredients, etc.) on food.*

NYC Standards Connections:

Language Arts
R1, R8, SL1

Recommended Texts:

Tasty by Victoria Grace Elliott
Food: The New Gold by Kathlyn Gay

Where to Teach: ELA: Grades 7, 8 (HMH: Grade 7, IL: Grade 8)

NYC CORE CURRICULUM CONNECTIONS:

HMH, Unit 4, Grade 7, "Inspired by Nature" and "Never Retreat" from *Eyes Wide Open* by Paul Fleischman both connect to the industrialization of food systems (which can be connected to food processing)

Imagine Learning, Grade 8, Module 2 Unit 1 ("Build Background: Food Choices") "Where does our food come from? How do we analyze arguments about how food should be grown and processed? What factors influence our access to healthy food? How do we research this? What factors should we prioritize when making choices about our food? How do we share these recommendations with others? In this module, students develop their ability to research, weigh different aspects of complex dilemmas, and formulate opinions supported by evidence and reasoning as they explore the topic Food Choices."

EQUITY SPOTLIGHT

- ☀ Recognize the choices that students do and do not have in their own lives when it comes to selecting food. Be careful not to villainize processed foods as "bad" choices - and instead have discussions of the effects of processing without focusing on value judgements. In the Food & Health section, we look at how to identify ingredients and select foods closest to how they grow, with a focus on cafeteria options that students DO have in their lives.

Where Food Comes From 2

Understand how and why food is processed.

9-12

Describe different reasons that foods are processed and the pros and cons of food processing, including effect on food quality, food safety, nutrient content, the environment, and the economy.[8]

What this looks like: *Explore the role of processed food on health and discuss the implications of various types of food processing. Compare and contrast different food preservation methods and debate / discuss the pros and cons of food processing*

NYC Standards Connections:

Science
HS-LS2-1, HS-LS1-5, HS-LS2-4, HS-LS2-3, HS-LS1-6

Recommended Texts:

Excerpts from Tomatoland: How Modern Industrial Agriculture Destroyed Our Most Alluring Fruit by Barry Estabrook

New Visions Biology Food For All Student Handout:
- Tell the Story - A Medical Mystery (p. 4-5);
- Goldberg's Investigation (p. 65-70);
- Pellagra Text (p. 75-76);
- Decomposition Text (p. 86-87);
- Inequity of Pellagra (p. 100-101);
- Agricultural Practices in SE US (p. 103-108)

Where to Teach: Biology

NYC CORE CURRICULUM CONNECTIONS:

New Visions Biology, Unit 5, Food For All Students learn about the pellagra epidemic in the early 20th century southern US, and investigate the causes behind the disease and its disproportionate impact. They figure out that those who were sick primarily ate a corn-based diet, and they use concepts about matter and energy flow to figure out why corn was such an important cereal crop. Then they conduct investigations to figure out that processed food does not decompose as quickly as fresh food, and that tenant farmers relied heavily on processed corn. Through additional investigations and building on their ideas about cellular respiration and photosynthesis, students learn about the importance of niacin, that indigenous people had a process for making the niacin in corn more accessible, and that processing corn reduces the amount of available niacin. This helps them construct an explanation for why people who lacked a diverse diet and primarily ate processed corn suffered from niacin deficiency, the scientific cause of pellagra. They discuss how systemic inequities were the root cause for the disproportionate impact of pellagra on some groups, including Black tenant farmers. Finally they consider the role of processed food in their own communities and health, accessibility to fresh food, and consider innovations that may address this concern.

New Visions Biology, Unit 5, Food For All
Supplementary Video: History The Story Of All of Us Corn

[8] Adapted from UC Davis Center for Nutrition in Schools. (n.d.). *Nutrition education competencies*, 9-12.

Where Food Comes From 3

Understand the steps that food takes to get from source to table, and the roles that people and technology play throughout the process.

K-2 Identify the roles of different food workers who may help food get from farm to cafeteria tray (i.e. farmer, truck driver, school food chef).

3-5 Explain the steps food takes to get from farm to cafeteria tray.

6-8 Describe how technology has impacted the food system in both positive and negative ways.

9-12 Evaluate various farming technologies and how they could address food inequities, especially in urban communities.

EQUITY SPOTLIGHT

- ☀ Students may have family members, caregivers, or friends who are food service workers. Be sure to lift these professions as important to our food system and essential to communities, rather than focusing on any perceived judgments of these professions.
- ☀ Recognize that many students may have never visited a farm or really thought about where their food comes from - so invite and encourage questions from students and answer them with sincerity and kindness.
- ☀ Whenever possible, build in opportunities for all students to have hands-on learning experiences: planting in a school garden, growing food in a classroom system, or taking field trips to farms and gardens.

Where Food Comes From 3

Understand the steps that food takes to get from source to table, and the roles that people and technology play throughout the process.

K-2

Identify the roles of different food workers who may help food get from farm to cafeteria tray (i.e. farmer, truck driver, school food chef).

What this looks like: *Read texts about how food gets to your plate and discuss the people involved in the process; then make connections by discussing people in the school community (cafeteria staff, janitors, delivery drivers, etc.) who get food to your cafeteria tray. When possible, invite real individuals with these jobs into the classroom!*

NYC Standards Connections:

Literacy
R1, R3, R9, W3, W6, RF4

Social Studies:
K.6, 1.10

Recommended Texts:

PB&J Hooray by Janet Nolan
From the Farm, To Our Table by Amanda Morrow
Who Put the Cookies in the Cookie Jar? By George Shannon
Time for Cranberries by Lisl H. Detlefsen

Where to Teach: Literacy: Grades K, 1, 2 (HMH: 1, 2, W&W: K); Social Studies: Grades K, 1

NYC CORE CURRICULUM CONNECTIONS:

HMH, Grade 1, Module 2, "My Family, My Community", Week 3, "Who Put the Cookies in the Cookie Jar?" Students read *Who Put the Cookies in the Cookie Jar?* by George Shannon. The text looks at how many hands make the cookies that are in the cookie jar - from the farmers to the bakers to hands that make the cookie sheets and oven mitts. Ingredients like milk, butter, flour, eggs, and sugar are shown and how they are transported and stocked on shelves.

HMH, Grade 2, Module 10, "Many Cultures, One World" Texts include *Where on Earth Is My Bagel?* by Frances and Ginger Park in which a little boy in Korea goes on a search for a New York bagel - and in the process, ends up enlisting a local farmer, fisherman, beekeeper, and baker to help him make a bagel from scratch!

HMH, Grade 2, Module 10, "Many Cultures, One World" Includes *Time for Cranberries* by Lisl H. Detlefsen, in which a little boy is finally old enough to help his family grow and harvest cranberries.

Wit & Wisdom, Grade K, Unit 2, "What is true about real farm animals?" includes *The Year at Maple Hill Farm* by Alice and Martin Provensen (a text about a farm through the seasons, published in the 1970s). In connection with this, we encourage teachers to read additional texts showing the process of food from source to plate.

Passport to Social Studies, Grade K, Unit 3, Lesson 5, Who Works In Our Neighborhood? Students name and describe the purpose of community helpers and explain the difference between a good and a service. Understanding includes food as a good and that community members are involved in the process of food getting from source to table.

Passport to Social Studies, Grade 1, Unit 4, Lesson 9, We Are Producers and Consumers Students identify and discuss their most important needs. Students understand food as a need and services connected to receiving it.

Where Food Comes From 3

Understand the steps that food takes to get from source to table, and the roles that people and technology play throughout the process.

3-5 Explain the steps food takes to get from farm to cafeteria tray.

What this looks like: *Read and analyze nonfiction texts about where food comes from and people who grow/process/distribute food, both in the present and in the past.*

NYC Standards Connections:

Literacy
R1, R3, R8, W6, W7

Social Studies:
3.6, 3.9, 3.10, 4.2, 4.3

Recommended Texts:

Before We Eat: From Farm to Table by Pat Brisson
Food for the Future: Sustainable Farms Around the World by Mia Wenjen
Farmer Will Allen and the Growing Table by Jacqueline Briggs Martin and illustrated by Eric-Shabazz Larkin
How Did That Get In My Lunchbox? by Chris Butterworth
The World That Feeds Us by Nancy Castaldo

Where to Teach: Social Studies: Grades 3, 4; Literacy: Grade 3 (HMH: Grade 3)

NYC CORE CURRICULUM CONNECTIONS:

HMH, Grade 3, Module 7, "Make a Difference" Week 1 texts include *Farmer Will Allen and the Growing Table* by Jacqueline Briggs Martin - connections to composting, aquaponics, community gardens, where food comes from!

HMH Grade 3, Module 9, "From Farm to table" Includes *How Did That Get in My Lunchbox?* by Adrienne Sylver (week 1), a film called *Carrots, Farm to Fork*, *How Do You Raise a Raisin?* by Pam Muñoz Ryan (week 2), and *It's Our Garden: From Seeds to Harvest in a School Garden* by George Ancona

Passport to Social Studies, Grade 3, Nigeria Case Study, Lesson 4, Nigerian Marketplace Students gain a basic understanding of Nigeria's natural resources by simulating a Nigerian marketplace and learning how Nigerians use these resources and exchange them for other items they may want or need.

Passport to Social Studies, Grade 4, Unit 2, Lesson 3, Male Gender Roles in Native American Society Students define the roles of men including fishing and hunting for food.

Passport to Social Studies, Grade 4, Unit 2, Lesson 3, Male Gender Roles in Native American Society Students define the roles of men including fishing and hunting for food

Passport to Social Studies, Grade 4, Unit 2, Suggested Lesson, Female Gender Roles in Native American Society Students define the roles of women including farming and gathering wild food

Passport to Social Studies, Grade 4, Unit 2, Lesson 6, Contributions of Native Americans Students analyze primary and secondary source documents to understand and appreciate the contributions of Native Americans including specific foods and processes related to farming and food.

Passport to Social Studies, Grade 4, Unit 3, Lesson 2, Geography of the Thirteen Colonies and New York
Students learn about early New York's development and establishment as an emerging center of commerce by analyzing geographical features and identifying natural resources.

Where Food Comes From 3

Understand the steps that food takes to get from source to table, and the roles that people and technology play throughout the process.

6-8 Describe how technology has impacted the food system in both positive and negative ways.

What this looks like: *Read and analyze nonfiction texts about technological advances on food production both throughout history and in the present. Consider how technology has impacted the food system - and, in turn, society - in positive and negative ways.*

NYC Standards Connections:

Literacy
R1, R3, R8, W6, W7

Social Studies:
6.5, 8.2, 8.4, 8.5

Recommended Texts:

Just in Case by Megan Clendenan
Agriculture Through the Ages: From Silk to Supermarkets by Michael and Mary Woods
Full of Beans: Henry Ford Grows a Car by Peggy Peggy Thomas

Where to Teach: **HMH: 8, IL: 8, W&W: Not explicitly taught, Passport to Social Studies: Grades 6, 8, SCALE Science: Grade 8**

NYC CORE CURRICULUM CONNECTIONS:

HMH, Grade 8, Unit 1, "Gadgets and Glitches" Students read "The Automation Paradox" and "Heads Up Humans", two texts about the effects of automation on our society's future, with mention of automated equipment for delivering food and in farming (Collaborate and Compare sets of texts)

Imagine Learning, Grade 8, Module 2, Unit 1 ("Build Background: Food Choices") Includes guiding questions including "Where does our food come from? How do we analyze arguments about how food should be grown and processed?" Students research food choices and formulate opinions to develop argumentative writing.

Imagine Learning, Grade 8, Module 2 ("Research Access to Healthy Food") Students research GMOs as a class and then conduct research on a topic of their choosing as they write an expository essay.

Passport to Social Studies, Grade 6, Unit 4, Lesson 8, Geography of Ancient Greece Students analyze maps and secondary sources to understand the geographic forces that shaped ancient Greek civilization, farming in particular

Passport to Social Studies, Grade 6, Unit 4, Lesson 8, Technology in Ancient Greece Students consider technology developed to solve the problems of Ancient Greek civilizations, including tools and processes around food

Passport to Social Studies, Grade 8, Unit 2, Lesson 11, The Jungle Students analyze and discuss the negative impact of industrialization on society through a close reading of *The Jungle* by Upton Sinclair

SCALE, Grade 8, Unit 4, Task 4, Human Intervention Genetic Engineering vs Selecting Breeding to produce food. Here students learn about how human intervention led to changes of species (food) over time.

Where Food Comes From 3

Understand the steps that food takes to get from source to table, and the roles that people and technology play throughout the process.

9-12 Evaluate various farming technologies and how they could address food inequities, especially in urban communities.

What this looks like: *Build prototypes of various types of garden approaches (or research various approaches) and evaluate their effectiveness. When possible, design/try/visit growing systems, such as hydroponics, aeroponics, aquaponics, raised beds, etc.*

NYC Standards Connections:

Science:
HS-LS2-1, HS-LS1-5 HS-LS2-4, HS-LS2-3

Recommended Texts:

Food Related Stories by Gaby Melian
Excerpts from Tomatoland: How Modern Industrial Agriculture Destroyed Our Most Alluring Fruit by Barry Estabrook
Farm Anatomy by Julia Rothman

Where to Teach: **Biology, Engineering**

NYC CORE CURRICULUM CONNECTIONS:

New Visions Biology, Food for All, final task **"**What solutions can address inequities in access to a diverse nutritious diet within our local communities? Explore and evaluate different innovations to address this: rooftop farming, vertical farming, community gardens, aquaponics"

Engineering In an Engineering classroom, engage students in the steps of the engineering design process to design and prototype their own growing system. Students can design their system and then prototype using whatever materials are available, including all recycled materials. Engage students in designing for whatever constraints truly exist at the school, such as lack of natural light, no outdoor space.

Where Food Comes From 4

Understand how to prepare food.

K-2 Put the steps of a recipe in order, using simple cooking vocabulary (“stir”, “mix”, etc.) and/or pictures to show each step, and label steps using successive numbers.

3-5 Read a recipe and explain the role of different parts of a recipe (ingredients list, measurements, steps, servings). Demonstrate measurement of halves, thirds, quarters, and eighths in a recipe, and solve recipe-related problems adding and subtracting liquid volumes in liters.

6-8 Understand the science of heating and cooling food. Apply mathematical understanding of ratios and rate reasoning to scale a recipe.

9-12 Understand the chemistry behind cooking.

EQUITY SPOTLIGHT:

☀ Giving students cooking skills helps them have tools throughout their lives to explore food and connect with what they are eating. While hands-on cooking can be challenging in classrooms, finding ways to do simple lessons linked to food preparation, bringing in an external organization to offer hands-on cooking experiences, or taking a field trip that involves cooking are powerful opportunities!

Where Food Comes From 4

Understand how to prepare food

K-2

Put the steps of a recipe in order, using simple cooking vocabulary ("stir", "mix", etc.) and/or pictures to show each step, and label steps using successive numbers.

What this looks like:

Identify steps in a how-to recipe sequence and illustrate the steps. Learn cooking vocabulary such as "stir," "mix," "whisk", "measure". Use basic kitchen tools to prepare a simple recipe and then depict the steps using words, numbers, and illustration.

NYC Standards Connections:

Literacy:
KW3, KSL5

Mathematics:
K.CC, 1.NBT

Recommended Texts:

Look and Cook Breakfast by Valorie Fisher
Look and Cook Snacks by Valorie Fisher
Stir Crack Whisk Bake by America's Test Kitchen and Maddie Frost
1 Big Salad: A Delicious Counting Book by Juana Medina

Where to Teach: **Math, Literacy: Grade K**

NYC CORE CURRICULUM CONNECTIONS:

HMH, Grade K, Module 8, "From Plant to Plate" Texts include *How Does Your Salad Grow?* By Francie Alexander, which goes through the steps of planting and growing the vegetables for a salad, and the steps of making a salad. Have students create their own recipe, either something real (prepared in class!) or fictional (a pretend recipe, or one using simulated ingredients) and then write and illustrate the recipe to the best of students' abilities. Other texts in this unit linked to "How To" writing include *PB & J Hooray!* By Janet Nolan and *Growing Vegetable Soup* by Lois Ehlert.

ABOVE: Elementary school students "make" their own salads!

Where Food Comes From 4

Understand how to prepare food

3-5

Read a recipe and explain the role of different parts of a recipe (ingredients list, measurements, steps, servings). Demonstrate measurement of halves, thirds, quarters, and eighths in a recipe, and solve recipe-related problems adding and subtracting liquid volumes in liters.

What this looks like:

Follow a recipe that includes measurements in fractions and liquid measured in liters to prepare a simple snack. Have students create and record their own recipe for a simple snack item (i.e. trail mix, fruit salad, yogurt parfait).

NYC Standards Connections:

Mathematics:
3.NF, 3.MD

Recommended Texts:

How Do You Raise a Raisin? by Pam Muñoz Ryan
Cooking Step by Step by Denise Smart
Green Kids Cook by Jenny Chandler
Science You Can Eat by Stefan Gates (March 2026)

Where to Teach: **Math, Grade 3**

NYC CORE CURRICULUM CONNECTIONS:

HMH, Grade 3, Module 4 "From Farm to Table" Students read *How do you Raise a Raisin?* By Pam Muñoz Ryan, going through the steps of a raisin's journey from seed to plate. This could be a strong complement to a math lesson that utilizes raisins as part of a simple recipe.

HMH, Grade 4, Module 8 "Food for Thought" Students watch Kids Rock Nutrition In The Kitchen, a USDA video showing children cooking and going through the steps of cooking. They also read "Now You're Cooking!" by René Saldaña Jr. about two kids competing in a cooking competition. Both would be strong tie-ins to remind students of their learning about recipes in the previous grade!

RIGHT: A parfait making station offers connections to math and engineering as students design and test their ideal recipe!

Where Food Comes From 4

Understand how to prepare food.

6-8

Understand the science of heating and cooling food. Apply mathematical understanding of ratios and rate reasoning to scale a recipe.

What this looks like: *Science labs on the Science of Heating and Cooling, either directly related to food or made connected to food through discussion. Scale a recipe to be able to feed two entire classes of students, or to feed two people.*

NYC Standards Connections:

Science:
MS-PS1-6, MS-PS3-3, MS-PS3-4

Mathematics:
6.RP

Recommended Texts:

The Stuff that Stuff is Made of by Jonathan Drori
Starting from Scratch by Sarah Elton
The Complete Cookbook for Young Scientists by America's Test Kitchen Kids

Where to Teach: Grade 6 Science, 6th grade Math

ABOVE: Even simple demos, like cooking greens in a school garden, are powerful learning opportunities

Where Food Comes From 4

Understand how to prepare food.

6-8

Understand the science of heating and cooling food; Apply mathematical understanding of ratios and rate reasoning to scale a recipe.

NYC CORE CURRICULUM CONNECTIONS:

Scale Sci Grade 6, Unit 1, Energy In this unit students have several opportunities to learn, experiment, and develop models explaining the science behind heating and cooling:
Task 1 Elaborate lesson - In this lesson, students discuss the science behind how a toaster works to toast bread, or heat transfer when water is boiled (Energy Task 1, Elaborate Lesson, slide #20, 21)
Task 2 Students experiment on the science behind temperature change and energy transfer when heating and cooling drinks by creating a simple model to show energy transfer during the heating and cooling process.
Task 3 Students consider how refrigeration works and learn ways heat transfers: conduction, radiation, convection.
Task 4 Students learn how thermal energy is controlled by insulators and conductors. They conduct an experiment in which they test several items (materials like copper, aluminum, etc used in heating food) to identify which materials are best as conductors or insulators
Task 5 This task launches by reflecting on the Goldilocks story. Students discuss What is Goldilocks experiencing as she tastes the porridge? Which porridge did she decide to eat? If all bowls have porridge, what do you think is the difference between them? Students conduct an experiment on how the mass of an object affects heat transfer.

NOTE: The concepts on heat transfer, heating and cooling, how mass of an object affects heat transfer, and the best type of cooking pots because of their properties to conduct heat are also addressed in NYS Middle School Investigation Cool It!

SCALE, Grade 6, Unit 3 (Extreme Living) Task 4. Here students engage in the lesson through the following launch: "You are boiling a pot of water while cooking pasta. You place a cool metal spoon into the pot to stir the mixture. You have to leave the stove for a minute and when you come back, you grab the metal spoon…ouch! It's now super hot! Make a hypothesis: Why is the handle of the spoon hot even though the handle is not submerged in the boiling water?" They then design and conduct experiments similar to the one in Cool It, where they check the relationship of one of the variables to the transfer of heat.

Where Food Comes From 4

Understand how to prepare food.

9-12 Understand the chemistry behind cooking.

What this looks like: *Apply chemistry principles to cooking*

NYC Standards Connections:

Science
HS-PS1-5, HS-PS1-6, HS-PS1-7, HS-PS1-11, HS-PS4-4

Recommended Texts:

Eliza, from Scratch by Sophia Lee
On Food & Cooking by Harold McGee
Culinary Reactions by Simon Quellen Field
Science & Cooking by Pia M. Sörensen, Michael P. Brenner, David A. Weitz

Where to Teach: **Chemistry**

NYC CORE CURRICULUM CONNECTIONS:

Chemistry OpenSciEd

PH
We can test the pH of a substance using pH indicator strips or indicator solutions.

- Water that is carbonated has a lower pH value than water that is not carbonated.
- Acidic substances have a pH below 7, basic substances have a pH above 7, and neutral substances have a pH of 7. This is determined by the ratios of H+ and OH- ions in the solution.
- A tenfold change in the H+ ion concentration changes the pH value by 1 on the pH scale. (pH importance in cooking food along with unique boiling point to cook/ bake to dissolve food components)

Electromagnetic Radiation and Matter
Microwave cooking

- Microwave cooking utilizes non-ionizing electromagnetic radiation, typically at 2.45 GHz, to rapidly heat food by forcing polar molecules

Unit 5: Nuclear Energy (Isotopes) for food preservation and storage .

Structure and properties of matter
Solid table salt (sodium chloride) is an ionic compound, which means it is made of positive and negative ions that form by gaining or losing an electron.

- Water molecules have permanent partially positive and partially negative sides (polarity).
- When water molecules make contact with solid salt they pull individual ions off, causing the salt to break apart (dissolve) and the ions to spread throughout the solution.
- Ions in solution can conduct electricity.
- Water in living things contains dissolved salts and other electrolytes.
- Specific heat required for the melting/ evaporation of specific liquids.

Chemistry State labs

- *Fast and fragrance*: focus on how different food extracts flavor the base to make different fragrances
- *Just a drop:* Acid base reactions - connect to most of the kitchen food reactions (i.e. baking)
- *Bend and stretch*: Make bioplastic with Agar; work on different foods with strong bonds to create biodegradable edible plastic. (i.e. cake photosheets, sugar sculptures)

Food & Environment

The environment is a crucial part of our food system.

Students will:

1. Understand that all living things need energy from food in order to live.
2. Understand that we are part of a food web that includes all living things and we are interdependent on other organisms to live.
3. Understand how seasons, geography, and climate affect what we eat and when.
4. Know that plants need specific conditions to grow and thrive.
5. Understand how food production and food waste impacts our environment.
6. Determine how we can make choices and encourage others to make choices that neutrally or positively impact the environment.

Food & Environment 1

Understand that all living things need energy from food in order to live.

K-2 Identify living and nonliving things, and explain that all living things need some kind of food to live.[9]

3-5 Explain that food is matter that contains energy living things need to live and grow.

6-8 Explain why living things need a steady supply of energy to stay alive and keep their bodies working properly.

9-12 Explain what makes a sustainable and resilient ecosystem in terms of energy flow and related concepts.

EQUITY SPOTLIGHT:

- ☀ Give students access to vocabulary to support learning, and be careful not to assume students all know what organisms live in a given ecosystem outside of NYC.
- ☀ Recognize that we humans are part of ecosystems, not separate from them. Situate students in understanding their role in an ecosystem and how their ecosystem is constructed (often manmade, agricultural ecosystems!), and how it impacts or is interrelated with natural ecosystems (pollinators, for example, are required for human food systems to survive; they are part of both natural and farmed ecosystems).

[9] Adapted from Center for Ecoliteracy. (2014). *Big ideas: A new alignment with academic standards*, Environment K-2.

Food & Environment 1

Understand that all living things need energy from food in order to live.

K-2

Identify living and nonliving things, and explain that all living things need some kind of food to live.[10]

What this looks like: *Readings and science lessons that help students learn the characteristics of living and non-living things and identify examples of each. Play a sorting game to identify living and nonliving things and come up with defining characteristics of each.*

NYC Standards Connections:

Science
K-LS1-1, K-ESS2-2, K-ESS3-1

Recommended Texts:

Creep, Leap, Crunch! by Jody Jensen Shaffer
This is the Ocean by Elizabeth Everett

Where to Teach: Science: Grade K, 2 (Amplify); Imagine Learning: K

NYC CORE CURRICULUM CONNECTIONS:

Amplify, Grade K, Unit 1, Needs of Plants and Animals K 1.4 Exploring Animal Needs (Learning Outcomes: An animal needs food to live; Animals Eat different kinds of food)

Amplify, Grade K, Unit 1: Needs of Plants and Animals Lesson 1.6 Living or Nonliving?: Links directly to core ideas of identifying traits of living and nonliving things

Imagine Learning, Grade K, Module 3 Read aloud "Trees are Alive" by Kathleen Weidner Zoehfeld and "What's Alive and What's Not?" Written by EL Education for instructional purposes. This can be used to reinforce lessons from Science.

Amplify, Grade 2, Unit 1: Plant and Animal Relationships: Lesson 1.3 Students identify living things, note presence of plants and animals.

Amplify, Grade 2, Unit 1: Plant and Animal Relationships: Lesson 1.4 Students understand the link between plant structures and how they produce food that animals need.

Amplify, Grade 2, Unit 1: Plant and Animal Relationships: Lesson 3.3 Reinforces the idea that animals get energy (food) from plants and help them in return.

[10] Adapted from Center for Ecoliteracy. (2014). *Big ideas: A new alignment with academic standards*, Environment K-2.

Food & Environment 1

Understand that all living things need energy from food in order to live.

3-5 Explain that food is matter that contains energy living things need to live and grow.

What this looks like: *Learn about how food is made of energy and matter passed from one organism to another, forming a food chain or food web.*

NYC Standards Connections:

Science
5-LS2-1, 5-PS3-1

Recommended Texts:

What if There Were No Lemmings? by Suzanne Slade
What if There Were No Grey Wolves? by Suzanne Slade
What if There Were No Bees? by Suzanne Slade

Where to Teach: Amplify: 5

NYC CORE CURRICULUM CONNECTIONS:

Amplify, Grade 5, Unit 4: Ecosystem Restoration: Lesson 1.1 Students use a simulation of forest ecosystem; "How do organisms in an ecosystem get the matter and energy they need to grow and thrive?"

Amplify, Grade 5, Unit 4: Ecosystem Restoration: Lesson 1.2 Students build a terrarium and identify differences in organisms' energy needs

Amplify, Grade 5, Unit 4: Ecosystem Restoration: Lesson 1.3-1.4 Students make observations of organisms and simulations about why jaguars and sloths aren't thriving (Energy flow implied (predators/prey)

Amplify, Grade 5, Unit 4: Ecosystem Restoration: Lesson 1.5 - 1.7 Students explore food sources in simulation (mice, snakes, grass, mushrooms) - Direct modeling of energy flow

Amplify, Grade 5, Unit 4: Ecosystem Restoration: Lesson 2.1-2.4 Students investigate disturbed ecosystems; analyze organisms' needs - Energy flow disrupted when resources change

Amplify, Grade 5, Unit 4: Ecosystem Restoration: Lesson 2.5-2.7 Students model energy and matter in ecosystems; propose restoration actions - Models of food webs

Amplify, Grade 5, Unit 4: Ecosystem Restoration: Lesson 3.1-3.7 Students complete a culminating project: ecosystem restoration plans with evidence - Emphasizes restoring food sources for survival

Food & Environment 1

Understand that all living things need energy from food in order to live.

6-8 Explain why living things need a steady supply of energy to stay alive and keep their bodies working properly.

What this looks like: *Explore different ecosystems and understand how all members of an ecosystem are related by evaluating the impact of changes in one species to the full system.*

NYC Standards Connections:

Science
MS-LS2-3, MS-LS1-6, MS-LS1-7

Recommended Texts:

Science Comics: The Digestive System: A Tour Through Your Guts byJason Viola

Where to Teach: Amplify: 6, SCALE: 6, 7

NYC CORE CURRICULUM CONNECTIONS:

SCALE 6, Unit 2, "A Balanced Biosphere" Students learn about the various components and relationships that make up an ecosystem and then design their own "Hunger Games area-style" Biosphere. In the "Lift Off Task" students explore what makes a well-functioning ecosystem. In Task 3 "Produce, Reuse, Recycle" students learn about how energy flows through a network of living things (food webs), and in Task 4 "Interactions Between Organisms" students learn how plants and animals interact by exchanging nonliving matter. In Task 5 "A Chain of Resources" students learn how altering one part of an ecosystem affects other parts of the ecosystem.

SCALE 7, Unit 2, "Mimicking Nature's Design" invites students to look at how matter moves through food webs, including how animals use the energy from food for cellular respiration. In the culmination of this unit, students design their own aquaponic growing system.

Amplify, Grade 6, "Populations and Resources" Students study how eating relationships and reproduction shape population size, and look at how population changes in one food web can affect another.

Amplify, Grade 6: "Matter and Energy in Ecosystems Biodome Collapse" In this unit, students take on the role of scientists studying the collapse of a fictional biodome. They explore how members of an ecosystem are related and consider how changes in individual species affect an overall ecosystem.

Food & Environment 1

Understand that all living things need energy from food in order to live.

9-12 Explain what makes a sustainable and resilient ecosystem in terms of energy flow and related concepts

What this looks like: *Study various ecosystems, including sustainable resilient ecosystems and collapsed ecosystems and come up with a list of characteristics of a sustainable ecosystem.*

NYC Standards Connections:

Science
HS-LS2-1, HS-LS1-5, HS-LS2-4, HS-LS2-3, HS-LS1-6

Recommended Texts:

Braiding Sweetgrass: Young Readers' Edition by Robin Wall Kimmerer
Last Child in the Woods by Richard Louv

Where to Teach: Biology

NYC CORE CURRICULUM CONNECTIONS:

New Visions Biology, Food for All, Super Food that Changed the World, Explore lesson on food pyramid Students develop a mathematical model of energy flow through the food chain system to gather evidence regarding whether corn provides more energy than other foods like meat and dairy.

New Visions Biology, Woolly Mammoth, Kelp Forest, 5E Students launch this unit by analyzing kelp forest and urchin barren ecosystems using maps and datasets to assess ecosystem stability. They construct models to test how minor and major disturbances impact these environments. Integrating their models with complex texts, students investigate the relationships between keystone species, biodiversity, and biotic/abiotic factors. Ultimately, students critique evidence-based arguments regarding which ecosystem exhibits greater resilience.

HMH Into Literature, Grade 11, Unit 3 "The Individual & Society" In this unit, students read an excerpt from *Last Child in the Woods* by Richard Louv about how young people have become disconnected from nature. This is an excellent opportunity to connect students to thinking about their overall role in their food system, and as an extension, nature.

"Food is fuel for survival. I would teach high school here that carbohydrates are the primary energy source for humans, fats are secondary, protein is not a fuel source but necessary each day for muscle repair... Then put that in context of an ecosystem: where do we get each of those macronutrients, and what is our place in different ecosystems?"

-Emily Holder, Health Teacher, Frank McCourt High School

Food & Environment 2

Understand that we are part of a food web that includes all living things and we are interdependent on other organisms to live.

K-2	**Understand that living things get food (energy) from different sources, including the sun (plants) and other living things (animals).**
3-5	**Describe what a food web is and how it works.**
6-8	**Show how matter flows among living and nonliving parts of an ecosystem.**
9-12	**Analyze factors that affect the sustainability of food webs in nature and societies (such as human activities, food scarcity, climate).**[11]

EQUITY SPOTLIGHT:

☀ Recognize that we humans are part of ecosystems and that our role can influence a natural food web in both positive and negative ways. Situate students in understanding the science behind climate change and the factual impact of human activities on food systems.

[11] Adapted from Center for Ecoliteracy. (2014). *Big ideas: A new alignment with academic standards*, Environment 9-12, and New York State Education Department. (n.d.). Middle Level Career and Technical Education (2023). Family and Consumer Sciences: Food Systems and Production.

Food & Environment 2

We are part of a food web that includes all living things and we are interdependent on other organisms to live.

K-2

Understand that living things get food (energy) from different sources, including the sun (plants) and other living things (animals).

What this looks like: *Conduct a plant growing experiment and read texts about what plants and animals need to live.*

NYC Standards Connections:

Science
K-LS1-1, K-ESS2-2, K-ESS3-1

Recommended Texts:

Mushrooms Know by Kallie George
Up in the Garden Down in the Dirt by Kate Messner
Worm Makes a Sandwich by Brianne Farley

Where to Teach: Science: Grade K; Literacy: Grades K-2 (HMH: Grade K, Wit & Wisdom: Grade 1, 2)

NYC CORE CURRICULUM CONNECTIONS:

HMH, Grade K, Module 3: "Amazing Animals" looks at different animals, their features, and components of their ecosystems and lives.

Amplify, Grade K, Unit 1: Needs of Plants and Animals, Lesson K 1.5, Exploring Plant Needs Students explore what plants need (light, water), reinforcing the plant side of the food web and energy source. These ideas together form the basis of energy flow through food chains.

Wit & Wisdom, Grade 1, Module 2, "What can we discover about animals' unique features?" Students engage with a number of texts about animals and their features, which can be connected to food chains and animals needing to eat!

Wit & Wisdom, Grade 2, Module 2, includes a knowledge goal of "Build understanding of the interrelationships between people and nature." This module explores the relationship between indigenous Americans (American Indians) and colonizers settling the American West - and presents an opportunity to explore how people, conflict, and cultures shaped changes in food and even diet. Includes study of the Buffalo disappearing in the West, Johnny Appleseed Legend, and other texts about "What was life like in the West for early Americans?"

Food & Environment 2

We are part of a food web that includes all living things and we are interdependent on other organisms to live.

3-5 Describe what a food web is and how it works.

What this looks like: *Study different food webs by acting out a food web, drawing pictures, or engaging in a science investigation.*

NYC Standards Connections:

Science:
3-LS2-1, 3-LS4-2, 3-LS4-3, 3-LS3-2, 5-PS3-1, 5-LS1-1, 5-LS2-1

Recommended Texts:

What if There Were no Bees? by Suzanne Slade
Pass the Energy, Please! by Barbara Shaw McKinney

Where to Teach: Science: Grade 3 (Amplify: 3, Wit & Wisdom: 3)

NYC CORE CURRICULUM CONNECTIONS:

Wit & Wisdom, Grade 3, Module 1 "Read Aloud of Molly Bang's informational picture book, Ocean Sunlight: How Tiny Plants Feed the Seas. The book highlights the importance of the ocean and the relationship between the sun and the microscopic plants that form the basis of ocean food chains."

Amplify, Grade 3, Unit 3: Environments and Survival: Lesson 1.2 Students gain experience evaluating whether or not an organism is able to meet its needs for survival in a given environment, including food.

Amplify, Grade 3, Unit 3: Environments and Survival: Lesson 1.4 Students use a model to identify food as one of the key needs for survival.

Amplify, Grade 3, Unit 3: Environments and Survival: Lesson 2.1 Students use a model and analyze how organisms meet needs, including food. Food is explored as essential for survival in different environments. Connects to both the food strand and thread.

Amplify, Grade 3, Unit 3: Environments and Survival: Lesson 2.2-2.3 Students observe the structure of an animal's teeth to make inferences about what that animal eats.

Amplify, Grade 3, Inheritance and Traits: Students explore how organisms get their traits. In various parts of the unit, they look at wolves' and other animals' eating patterns and utilize data about the animals hunting, which can be connected to their role within the food web.

Food & Environment 2

We are part of a food web that includes all living things and we are interdependent on other organisms to live.

6-8 Show how matter flows among living and nonliving parts of an ecosystem.

What this looks like: *Draw an ecosystem and use arrows and labels to indicate the flow of matter between and among living and nonliving parts.*

NYC Standards Connections:

Science:
MS-LS2-3, MS-LS2-1, MS-LS2-2, MS-LS2-4, MS-LS2-5

Recommended Texts:

The Dirt! By Lindsay Leigh

Where to Teach: Science: Grade 6 (Amplify: 6, SCALE: 6, 7)

NYC CORE CURRICULUM CONNECTIONS:

Amplify, Grade 6, "Populations and Resources" Students study how eating relationships and reproduction shape population size, and look at how population changes in one food web can affect another.

Amplify, Grade 6, "Matter and Energy in Ecosystems Biodome Collapse" In this unit, students take on the role of scientists studying the collapse of a fictional biodome. They explore how members of an ecosystem are related and consider how changes in individual species affect an overall ecosystem.

SCALE 6, Unit 2 "A Balanced Biosphere" Students learn about the various components and relationships that make up an ecosystem and then design their own "Hunger Games area-style" Biosphere. In the "Lift Off Task" students explore what makes a well-functioning ecosystem. In Task 3 "Produce, Reuse, Recycle" students learn about how energy flows through a network of living things (food webs), and in Task 4 "Interactions Between Organisms" students learn how plants and animals interact by exchanging nonliving matter.

SCALE, Grade 7, Unit 2 "Mimicking Nature's Design" invites students to look at how matter moves through food webs, including how animals use the energy from food for cellular respiration. In the culmination of this unit, students design their own aquaponic growing system.

SCALE, Grade 7, Unit 4, Task 3 & 4: In these tasks, students explore how human actions can lead to changes in the Andes ecosystem. For example: (1) students learn about hunting of chinchillas and its impact on seed dispersal and plant life. (2) Agricultural practices like overuse of fertilizers and contamination of water and its effect on aquatic life. After learning the effects of human impact, students come up with solutions to sustain biodiversity.

Food & Environment 2

We are part of a food web that includes all living things and we are interdependent on other organisms to live.

9-12 Analyze factors that affect the sustainability of food webs in nature and societies (such as human activities, food scarcity, climate).[12]

What this looks like: *Explore how changes to a food web can make the food web unsustainable by conducting research, creating models, and engaging in scientific investigations.*

NYC Standards Connections:

Science
HS-LS2-1, HS-LS1-5, HS-LS2-4, HS-LS2-3, HS-LS1-6

Recommended Texts:

Eyes Wide Open by Paul Fleishman
The Omnivore's Dilemma: Young Readers Edition by Michael Pollan
The Story of More by Hope Jahren

Where to Teach: Biology, English (HMH Grade 10)

NYC CORE CURRICULUM CONNECTIONS:

New Visions Biology, Food For All, Unit 5, HS LS 2-4 Students investigate why societies have used cereal crops like corn as their primary food sources and use this information to support or refute the theory that corn caused the pellagra epidemic. Finally, students reflect about how what they learned about cereal crops relates to their community.

New Visions Biology, Humans vs Bacteria, Unit 2 HS LS 4-5 The Microbiome Students explore a puzzling medical phenomenon: why patients with persistent *Clostridium difficile* (*C. diff*) bacterial infections are sometimes treated with a fecal transplant. This intriguing case study prompts students to investigate the complex relationships humans share with the billions of bacteria living inside and on our bodies.

New Visions Biology, Food for All, Superfood that Changed the World Students use a mathematical model of energy flow in food chains to gather evidence that corn provides more energy than dairy and meat.

New Visions Biology, Food for All, Superfood that Changed the World - Explain lesson & Elaborate lesson Students use their mathematical model of energy flow through the food chain system to develop an explanation regarding whether corn provides more energy than other foods like meat and dairy. Students consider staple crops around the world and in their own communities. They then use their energy pyramid models to develop a claim about why these crops are also efficient energy sources like corn.

HMH, Grade 10, Unit "Our Place in Nature" Students explore the essential question: "What effect do we have on nature, and how does nature affect us?" In exploring the connection between humans and nature, texts include "Can Genetic Engineering Solve the Problem We Created?" by Sarah Zhang, looking at the spiraling impact of the introduction of genetically modified organisms on ecosystems.

[12] Adapted from Center for Ecoliteracy. (2014). *Big ideas: A new alignment with academic standards*, Environment 9-12, and New York State Education Department. (n.d.). Middle Level Career and Technical Education (2023). Family and Consumer Sciences: Food Systems and Production.

Food & Environment 3

Know that plants need specific conditions to grow and thrive.

K-2 Identify what plants need to grow from seed to plant; plant and grow a plant.

3-5 Explain the structures that help plants to survive and their roles (i.e. roots, stems, leaves); explain how compost supports the growth of plants.

6-8 Explain how photosynthesis works on a molecular level.

9-12 Explain how plants maintain homeostasis.

EQUITY SPOTLIGHT:

☀ Not all schools or students have access to gardens. Find other ways to engage students in hands-on learning whenever possible. This may be planting microgreens on a windowsill, growing a seedling in a cup, or taking a field trip to volunteer in a park. Want a simple planting exercise? Put a dried bean from the grocery store in a ziplock bag with a damp paper towel; zip it up and tape to the window. It will sprout!

Food & Environment 3

Know that plants need specific conditions to grow and thrive.

K-2

Identify what plants need to grow from seed to plant; plant and grow a plant.

What this looks like: *Grow a plant from a seed!*

NYC Standards Connections:

Science:
K-LS1-1, 2-LS2-1, 2-LS2-2

Recommended Texts:

It Starts with a Seed by Laura Knowles
See What We Eat! by Scot Ritche
Green by Nicola Davies
Ada Twist, Scientist: The Why Files - All about Plants by Andrea Beaty, Theanne Griffin, David Roberts

Where to Teach: Science: Grade K, Grade 2; Literacy (HMH: K, 1, 2, Wit & Wisdom: 3)

ABOVE: Elementary schoolers get their hands dirty!

Food & Environment 3

Know that plants need specific conditions to grow and thrive.

K-2

Identify what plants need to grow from seed to plant; plant and grow a plant.

NYC CORE CURRICULUM CONNECTIONS:

Amplify, Grade K, Unit 1: Needs of Plants and Animals Lesson K 1.5 - Exploring Plant Needs Students explore what plants need (light, water), reinforcing the plant side of the food web and energy source. These ideas together form the basis of energy flow through food chains.

Amplify, Grade K, Unit 1: Needs of Plants and Animals Lesson 2.2 Highlights how plants need water and sunlight to grow.

Amplify, Grade K, Unit 1: Needs of Plants and Animals Lesson 2.4 Explores what helps plants grow.

Amplify, Grade 2, Unit 1: Plant and Animal Relationships: Lesson 1.2 Focuses on water and light as plant needs. Highlights the relationship between environment and food production

Amplify, Grade 2, Unit 1: Plant and Animal Relationships: Lesson 2.1 Students understand what plants need to live, linking back to what all living things need.

Wit & Wisdom, Grade 3, Module 1, "Read Aloud of Molly Bang's informational picture book, Ocean Sunlight: How Tiny Plants Feed the Seas. The book highlights the importance of the ocean and the relationship between the sun and the microscopic plants that form the basis of ocean food chains."

HMH, Grade K, Module 4, Better Together, Week 3 "If you plant a seed/color your world with kindness" Students read "If you plant a seed - shows seeds that grow into plants, or seeds of selfishness or seeds of kindness kindness"

HMH, Grade K, Module 8, "From Plant to Plate" Students read *Planting Seeds* by Kathryn Clay, which details how a plant grows and what it needs, as well as different places you can plant a seed (week 1) as well as *Up in the Garden and Down in the Dirt* by Kate Messner and *Earthworms* by Lisa J. Amstutz. These texts look at what happens below and above ground to grow the food we eat. *Rainbow Stew* by Cathryn Falwell shows kids cooking with their grandpa by harvesting different color ingredients from his garden to make rainbow stew, and *How Does Your Salad Grow?* by Francie Alexander which shows the ingredients for a salad starting from seeds.

HMH, Grade 1, Module 9, "Grow, Plants, Grow" This module is entirely about how plants grow! Texts include *If I Were a Tree* by Dar Hosta, *So You Want to Grow a Taco* by Bridget Heos, *The Curious Garden* by Peter Brown, *Which Part Do We Eat?* by Katherine Ayres, *The Talking Vegetables* by Won-Ldy Paye and Margaret H. Lippert, *Amazing Plant Bodies* by Ellen Lawrence, *Yum! ¡MmMm! ¡Qué rico!: Americas' Sproutings* by Pat Mora, *A Year in the Garde*n by Brad Hiebert

HMH, Grade 2, Module 8, "Time to Grow" The entire module is centered around the question "What do plants need to grow?" In week 1, readings include "The Growth of a Sunflower", a photo essay; "From Seed to Pine Tree: Following the Life Cycle" by Suzanne Slade (informational text) and "Experiment with What a Plant Needs to Grow" by Nadia Higgins. Week 3 includes texts like *The Patchwork Garden* by Diane de Anda, in which a little girl inspires her community to come together around a garden.

Food & Environment 3

Know that plants need specific conditions to grow and thrive.

3-5

Explain the structures that help plants to survive and their roles (i.e. roots, stems, leaves); explain how compost supports the growth of plants.

What this looks like: *Explore plant parts in the school garden and build/maintain a compost bin.*

NYC Standards Connections:

Science:
5-LS1-1

Recommended Texts:

Inside the Compost Bin by Melody Sumaoang Plan
Composting for Community by Michael Martinez
Making a Splash by Colleen Nelson

Where to Teach: Not deeply covered in core curriculum, but is supported by Social Studies Grades 3 and 5

NYC CORE CURRICULUM CONNECTIONS:

Imagine Learning, Grade 3, Module 4, Water Conservation Students read *One Well: The Story of Water on Earth* by Strauss, Rochelle, which can be connected to ideal growing conditions.

Passport to Social Studies, Grade 3, Unit 1, Suggested Lesson, Climate and Settlement Students consider and discuss how climate affects food availability options in a community.

Passport to Social Studies, Grade 3, Unit 1, Lesson 10, Modifying the Environment Students explain how people modify their environment and infer how these modifications help to support human settlement.

Passport to Social Studies, Grade 5, Dominican Republic Case Study, Lesson 5, The High Price of Sugar Students generate compelling questions about sugarcane production in the Dominican Republic, then research and synthesize information to respond to the questions.

Food & Environment 3

Know that plants need specific conditions to grow and thrive.

6-8 Explain how photosynthesis works on a molecular level.

What this looks like: *Engage in Science lessons on how photosynthesis works and design a science experiment to grow plants under different light conditions*

NYC Standards Connections:

Science:
MS-LS2-3, MS-LS1-6, MS-LS1-7

Recommended Texts:

Plant Cells by Madison Anders
Experiment with Photosynthesis by Nadia Higgins
Green: The Story of Life on Our Planet by Nicola Davies
The Secret World of Plants by Brian Hoare

Where to Teach: Science: Grade 6, 7, or 8 (Amplify: Grade 6; SCALE: Grade 7 & 8)

NYC CORE CURRICULUM CONNECTIONS:

Amplify, Grade 6, "Matter and Energy in Ecosystems Biodome Collapse" In this unit, students take on the role of scientists studying the collapse of a fictional biodome. As part of this, they explore the relationship between producers, consumers, and decomposers; how organisms meet their energy needs through cellular respiration and photosynthesis; how carbon moves between living and nonliving matter; the role of sunlight and atmosphere in an ecosystem.

SCALE, Grade 7, Unit 2 "Mimicking Nature's Design" culminates in students designing their own aquaponic growing system after learning about what plants and animals need to grow and thrive. They include an explanation of photosynthesis as part of the culminating project.

SCALE, Grade 8, Unit 3 "Nature v. Nurture" students explore what plants need to grow. They then apply their knowledge to explain and address a hypothetical algae boom in a lake.

Food & Environment 3

Know that plants need specific conditions to grow and thrive.

9-12 Explain how plants and animals maintain homeostasis.

What this looks like: *Delve into plant functionality in Science classrooms. When possible apply science learning to cultivating plants in the school garden - or growing simple microgreens or herbs on a school windowsill.*

NYC Standards Connections:

Science:
HS-PS1-5, HS-PS1-6, HS-PS1-7, HS-PS1-11, HS-ETS1-1, HS-ETS1-2, HS-LS1-2, HS-LS1-3, HS-LS1-4, HS-LS1-6, HS-LS1-7, HS LS-3-3, HS-LS-4-3

Recommended Texts:

The Forgotten Teachers by Brian Islet
Eating the Sun by Oliver Morton
How Plants Work by Linda Chalker-Scott

Where to Teach: Biology, Chemistry

NYC CORE CURRICULUM CONNECTIONS:

New Visions Biology, Marathon Runner_Unit 1 Gas Exchange and Cellular Respiration HS LS 1-3 Students investigate why humans breathe faster when exercising. They explore how the respiratory and circulatory systems work together and consider the feedback mechanisms that regulate their functioning so cellular respiration can continue while exercising. While related to human respiration, this is a prime opportunity to tie into plant's respiratory processes.

Saving the Mountain Lion_Unit_4 Engineering Gene Flow HS LS-3-3 and 4-3 Students investigate how cellular level processes of sexual reproduction lead to new genetic combinations in offspring and how higher diversity in parents' genetics increases the probability of new genetic combinations in individual offspring and in a population. Genetic variation allows for a variation of traits, the material needed for natural selection and adaptation during changing environmental conditions.

Chemistry - OpenSciEd Chem Unit 3 "Molecular Processes" Lessons 10-12 Students read about growing plants in space and model the differences between Ammonia (NH3) and Ammonium (NH4+). Students read about perchlorate ions in martian soil and model chemical reactions. *This is a useful opportunity to engage students in looking at school garden soil content, if available to your school, to understand how this relates to growing plants on Earth.

Food & Environment 4

Understand how seasons, geography, and climate affect what we eat and when.

K-2 Identify how seasons and geography affect what kinds of food can be grown in a place (i.e. strawberries can grow in California in the winter, but not in New York!).

3-5 Explain how seasonality affects the availability and nutritional quality of foods.

6-8 Explain how human impact can affect climate and seasonality.

9-12 Explain how climate has impacted agriculture over the course of human history.

EQUITY SPOTLIGHT:

☀ Present climate change from a scientific perspective utilizing factual understanding of how the earth's climate has changed over time.

Food & Environment 4

Understand how seasons, geography, and climate affect what we eat and when.

K-2

Identify how seasons and geography affect what kinds of food can be grown in a place (i.e. strawberries can grow in California in the winter, but not in New York!).

What this looks like:

Read texts to learn about seasons and what grows in different seasons. Observe what kinds of vegetables and fruits grow in the school garden. Look at pictures of food grown around the world in different climates to draw conclusions about what can grow in different conditions. Invite students to share experiences with visiting places with different climates and sharing what fruits and vegetables grow there.

NYC Standards Connections:

Science:
K-LS1-1, K-ESS2-1, K-ESS3-2, K-PS3-2, 1-ESS1-2

Recommended Texts:

See What We Eat by Scot Ritchie
Outdoor Farm, Indoor Farm by Lindsay H. Metcalf, Xin Li

Where to Teach: Science or ELA, Grades K and 1 or 2 (Wit & Wisdom:K, 2, HMH: K, 2, IL: K, 1)

NYC CORE CURRICULUM CONNECTIONS:

Wit & Wisdom, Grade K, Module 2 Includes the Seasons Song and *The Year at Maple Hill Farm* by Alice and Martin Provensen

Wit & Wisdom, Grade 2, Module 1 This module is all about the four seasons! Texts include *How do you know it's Fall?* by Ruth, *The Little Yellow Leaf* by Carin Berger, *Why do Leaves Change Color?* by Besty Maestro, and *Sky Tree* by Thomas Locker. This unit presents a terrific opportunity to engage students in discussing not only what happens to trees as the seasons change, but what foods become available across different seasons.

HMH, Grade K, Module 5, "Now you see it, now you don't", Week 2 "Day and Night/The Best Season" Students read "How Do You Know It's Winter?" by Ruth Owen, "Day and Night" by Margaret Hall, and "The Best Season" by Nina Crews and consider different seasons.

HMH, Grade 1, Module 7, "The Big Outdoors" Students engage with a number of texts about weather patterns across different places as they explore how things in nature change.

HMH, Grade 2, Module 6, "Weather Wise" In week 1, students read "Weather Through the Seasons," an informational text; in week 3, texts include Fall Leaves by Loretta Holland, and Whatever the Weather (poetry). All can be connections to students understanding the season

Imagine Learning, Grade K, Module 2 "Weather Wonders" includes a series of readings about weather

Imagine Learning, Grade 1, Module 2 "A Study of the Sun, Moon, and Stars" includes readings and observations on the sun and its patterns, which connect to seasons!

EQUITY SPOTLIGHT:

☀ Be sure not to assume that all students have visited a place outside NY - but making space for those who have or have learned about other climates to share those experiences can create a powerful space for lifting students' cultural ties!

Food & Environment 4

Understand how seasons, geography, and climate affect what we eat and when.

3-5 Explain how seasonality affects the availability of foods.

What this looks like:

Explore how seasonality impacts food availability by studying different regions' climates and cuisines in Social Studies. Study the science behind weather and climate and plant and animal growth to understand how climate impacts food production in Science. When possible, visit a farm or invite a farmer to the classroom to hear about food production firsthand!

NYC Standards Connections:

Science:
3-LS4-4, 3-ESS2-1, 3-ESS2-2, 3-ESS2-3, 5-ESS1-2, 5-PS3-1, 5-LS2-1

Social Studies
3.1, 3.3, 4.1, 5.4, 5.1

Recommended Texts:

Busy Spring by Sean Taylor and Alex Morrs
Garden Sleeping, Garden Growing by Diana Magnuson

Where to Teach: Literacy, Science, and/or Social Studies (HMH: Grade 5, Passport to Social Studies: 3, 4, 5, Amplify: 3)

"By seeing a working farm and hearing directly from a farmer, students can observe which crops are growing, learn how weather and climate influence planting and harvesting, and understand why certain foods are only available at specific times of the year. This realworld connection helps build a strong foundation for both Science and Social Studies, making concepts like plant growth, ecosystems, and regional food systems more meaningful and easier to understand."

- Justine Shishkoff, Special Education Teacher at 135Q The Bellaire Magnet School of Exploration through the Arts, Special Education Teacher on the experience of having a farmer visit and zoom with her class!

Food & Environment 4

Understand how seasons, geography, and climate affect what we eat and when.

3-5 Explain how seasonality affects the availability of foods.

NYC CORE CURRICULUM CONNECTIONS:

HMH, Grade 5, Module 2, "What a Story," Week 2 Students read a short play, The Miracle of Spring" by Helen Hanna, about how King Bartholomew's ban of Spring leads him to realize that he has disrespected Mother Nature, upset the seasons, and destroyed the food supply. The characters - including animals, plants, and seasons, teach him how food grows and how the world needs the seasons.

Passport to Social Studies, Grade 3, Unit 1, Suggested Lesson, Climate and Settlement Students consider and discuss how climate affects food availability options in a community.

Passport to Social Studies, Grade 3, Unit 1, Lesson 7, Natural Resources by Continent Students define natural resources and explain how people use natural resources to meet their needs. Students use map skills and resources to identify natural resources available around the world.

Passport to Social Studies, Grade 3, Unit 1, Lesson 10, Modifying the Environment Students explain how people modify their environment and infer how these modifications help to support human settlement.

Passport to Social Studies, Grade 3, Republic of China Case Study, Lesson 5, China's Authentic Cuisine Students investigate the various regions of China and learn how these regions influenced Chinese cuisine.

Passport to Social Studies, Grade 3, Peru Case Study, Lesson 4, Peru's Climate and Vegetation Zones Students research the climate and vegetation of Peru's three main physical regions.

Passport to Social Studies, Grade 4, Unit 1, Lesson 7, The Hudson River Students will define an estuary and identify the distinct characteristics of the Hudson River, including available wildlife.

Passport to Social Studies, Grade 4, Unit 3, Lesson 2, Geography of the Thirteen Colonies and New York Students learn about early New York's development and establishment as an emerging center of commerce by analyzing geographical features and identifying natural resources

Passport to Social Studies, Grade 5, Unit 1, Lesson 12, Pueblo and Their Environmental Interactions Students gather evidence to build an understanding of how the Pueblo utilized natural resources.

Amplify, Grade 3, Weather and Climate In this unit, students explore how climate affects the orangutan's environment. In lesson 3.1, they explore the relationship between weather patterns and the orangutan's consumption of durian fruits.

Food & Environment 4

Understand how seasons, geography, and climate affect what we eat and when.

6-8 Explain how human impact can affect climate and seasonality.

What this looks like: *Explore scientific phenomena that are the result of climate change and relate this to food availability.*

NYC Standards Connections:

Science:
MS-ESS2-4, MS-ESS2-5, MS-ESS2-6, MS-ESS3-2, MS-ESS-3-3, MS-ESS3-4

Recommended Texts:

The Story of More: How We Got to Climate Change and Where to Go from Here (Young Readers Edition) by Hope Jahren
Climate Change by Josh Sneideman and Erin Twamley
Climate Change by Harriet Brundle
Change is in the Air by Debbie Levy
World Without Fish by Mark Kurlansky

Where to Teach: Amplify: 6, SCALE: 6, 7, Passport to Social Studies: 6

NYC CORE CURRICULUM CONNECTIONS:

Amplify, Grade 6, "Matter & Energy in Ecosystems" in Chapter 4 Students apply their understanding of photosynthesis, cellular respiration, and carbon dioxide to the problem of carbon dioxide increasing as a result of deforestation.

SCALE, Grade 6, Unit 2, "A Balanced Biosphere" looks at how various components of an ecosystem work together. In Task 5 "A Chain of Resources" students learn how altering one part of an ecosystem affects other parts of the ecosystem.

SCALE, Grade 6, Unit 4 "Climate Change" Students learn about what climate change is, why it's important, and the effects of climate change on humans and the environment.

SCALE, Grade 6, Unit 3, "Extreme Living" Students look at how to adapt an extreme environment to make it habitable.

SCALE, Grade 7, Unit 5, "A Warmer World" Students investigate the impact of climate change, starting with studying the decline in bee populations in recent decades. To culminate their learning, students design a method to monitor the impact of climate change on a specific plant or animal.

Passport to Social Studies, Grade 6, Unit 4, Lesson 8, Geography of Ancient Greece Students analyze maps and secondary sources to understand the geographic forces that shaped ancient Greek civilization, farming in particular

Food & Environment 4

Understand how seasons, geography, and climate affect what we eat and when.

9-12 Explain how climate has impacted agriculture over the course of human history.

What this looks like: *Explore trends across time to understand the impact of climate change over the course of human history. Explore how farming has changed and has been changed by the changing climate.*

NYC Standards Connections:

Science:
HS-LS2-1, HS-LS-2-2, HS-LS-2-6 HS-LS-2-7, HS-LS-2-8, HS-LS3-2, HS-LS3-3, HS-LS4-2, HS-LS4-3, HS-LS4-4, HS-LS4-5, HS-LS-4-6

Recommended Texts:

When the World Runs Dry by Nancy F. Calstado
The Story of More How We Got to Climate Change and Where to Go from Here (Young Readers Edition) by Hope Jahren
Geoengineering the Earth's Climate by Jennifer Swanson

Where to Teach: HS: Biology, Passport to Social Studies: 9

NYC CORE CURRICULUM CONNECTIONS:

New Visions Biology, Unit 5, "Food For All" HS LS 2-1 Neolithic Revolution Throughout most of history, the human population remained stable, limited by the environment's natural carrying capacity and finite food resources. However, the dawn of agriculture roughly 10,000 years ago triggered a global shift, causing human populations to expand rapidly as farming practices spread.

New Visions Biology, Unit 4 "Saving the Mountain Lion" HS LS 3-3 Engineering Gene Flow Students investigate how sexual reproduction creates new genetic combinations at the cellular level. They learn that higher parental genetic diversity increases the likelihood of unique trait combinations in both individuals and populations. Finally, they connect genetic variation to the mechanism of natural selection and a population's ability to adapt to changing environments.

New Visions Biology, Unit 2 "Humans vs Bacteria" HS LS 4-4 Most of the subtopics relate to this specific standard (The Black Death, Antibiotic Resistance and The Microbiome)

Passport to Social Studies, Grade 9, Unit 6, Day 12, Columbian Exchange Students evaluate changes that occurred as a result of the Columbian exchange.

New Visions Biology, Neolithic Revolution 3E Students analyze historical population graphs and use a mouse simulation to develop a mathematical understanding of carrying capacity. They apply these mathematical models across different scales to explain human population growth over time. Specifically, students examine how the Neolithic Revolution altered food production and consumption, ultimately connecting these historical patterns to modern climate shifts, agricultural adaptation, and food accessibility.

HMH Into Literature, Grade 10, Unit 6 "Our Place in Nature" Students explore the essential question, "What effect do we have on nature, and how does nature affect us?" This is a great opportunity to link in readings about the impact of humans on climate and how climate impacts our food system - even to tie to Regents Part 2 Practice (Argument) by having students read four texts about climate change and its impact on our food system, develop an argument (and distinguish it from alternate/opposing claims), and use evidence from three of the texts to support the argument.

Food & Environment 5

Understand how food production and food waste impacts our environment.

K-2 **Identify the impact of personal activities that have a positive or negative impact on the environment and community.**[13]

3-5 **Discuss the impacts of food waste on the environment, and identify methods for reducing food waste at school and in the community**.[14]

6-8 **Research the impact of different food production systems, such as organic, sustainable, and conventional, and their impact on the environment.**[15]

9-12 **Explain what makes a food system sustainable and analyze the benefits and challenges of different food production systems as they relate to environmental sustainability.**[16]

EQUITY SPOTLIGHT:

☀ Food waste can be a tricky topic in communities facing food insecurity. Avoid stigmatizing or othering those who are food insecure or in need of food by removing value judgement from the conversation and not labeling people with terms like “poor” or “needy” or “hungry.” Instead, focus on the environmental impact and the fact that food wasted could have been eaten by someone (not necessarily someone who is food insecure). When discussing food production systems, again focus on the environmental impact - food and health is addressed in a future section.

[13] Adapted from Massachusetts Department of Elementary and Secondary Education. (2023). *Massachusetts curriculum framework for comprehensive health and physical education*, 2.7 CE

[14] Adapted from Oregon Department of Education. (2016). *Oregon health education standards*, 3.1, 5.1

[15] Adapted from UC Davis Center for Nutrition in Schools. (n.d.). *Nutrition education competencies*, 5-6.

[16] Adapted from New York State Education Department. (n.d.). Middle Level Career and Technical Education (2023). *Family and Consumer Sciences: Food Systems and Production* and UC Davis Center for Nutrition in Schools. (n.d.). *Nutrition education competencies*, 9-12.

Food & Environment 5

Understand how food production and food waste impacts our environment.

K-2

Identify the impact of personal activities that have a positive or negative impact on the environment and community.[17]

What this looks like: *Discuss what it means to have a positive or negative impact on the environment or community. Give examples of various activities and have students decide if these have a positive or negative impact (i.e. throwing trash on the ground, planting trees or flowers), and have students generate their own ideas.*

NYC Standards Connections:

Science:
K-ESS2-2, K-ESS3-1, K-ESS3-3, 2-LS2-2

Recommended Texts:

The Mess That We Made by Michelle Lord
Gifts from the Garbage Truck by Andrew Larsen

Where to Teach: Morning Meeting or Advisory, or integrated into Literacy classrooms (HMH: Grade 1, 2)

NYC CORE CURRICULUM CONNECTIONS:

HMH Grade 1, Module 10, "Dare to Dream"
This unit centers around the essential question, "How can thinking in new ways help solve problems?" and features texts including an informational text called "Kids are Inventors too!" and *What Can You Do?* by Shelley Rotner and Sheila Kelly, which invites students to consider how kids all have different strengths and intelligences. They read about scientists and architects - all ways to invite students to think about THEIR impact on the environment and community and the possibilities for their own positive impact.

HMH Grade 2, Module 1, "Be a Super Citizen" In this module, students explore the essential question, "How can being a good citizen make a difference to others?" Texts include *Being a Good Citizen* by Rachelle Kreisman, a nonfiction guide to community involvement, and *Just a Dream* by Chris Van Allsburg, about a boy who is careless toward the environment until he has a dream about a polluted and trash-filled future and becomes more environmentally conscious. This can also be connected to Module 5, "Lead the Way," in which students learn about the qualities of a good leader.

[17] Adapted from Massachusetts Department of Elementary and Secondary Education. (2023). *Massachusetts curriculum framework for comprehensive health and physical education*, 2.7 CE

Food & Environment 5

Understand how food production and food waste impacts our environment.

3-5 Discuss the impacts of food waste on the environment, and identify methods for reducing food waste at school and in the community.[18]

What this looks like: *Read a nonfiction text about the impact of food waste and discuss how much food is wasted at school. Come up with ideas for how to reduce food waste at school (i.e. through composting, a "share table", etc.) and have students design an action plan to carry this out*

NYC Standards Connections:

Science:
3-LS3-2, 3-LS4-4, 4-ESS3-1, 4-ESS3-2, 5-LS2-1

Recommended Texts:

What a Waste by Jess French
Food for the Future by Mia Wen Jen
All That Trash by Melissa McCarthy
Total Garbage by Rebecca Donnelly
Luz Sees the Light by Claudia Dávila
Luz Makes a Slash by Claudia Dávila

Where to Teach: Literacy, Grade 4 or 5

NYC CORE CURRICULUM CONNECTIONS:

HMH, Grade 4, Module 9 "Global Guardians" In this module, students consider the essential question "What can people do to care for our planet?" Students read texts including *Luz Sees the Light* Claudia Dávila, a graphic novella about a 12-year-old girl who learns about sustainability thanks to her city facing energy shortages and rising costs (part of a larger "Luz Goes Green" series, all stories of the same character exploring environmental issues). Other texts include *How Can We Reduce Household Waste?* by Mary K. Pratt

HMH, Grade 5, Module 5 "Project Earth" focuses on the question "How can caring for Earth and its living things improve life now and in the future?" Texts include *The Good Garden: How One Family Went from Hunger to Having Enough* Katie Smith Milway.

"If a school has a Green Team, It would be perfect for them to spearhead this initiative. Students could even weigh the waste and track how many pounds are being wasted on a daily and weekly basis."

- Katrina Duncan Mora- 5th Grade Teacher, PS 135Q, The Bellaire Magnet School of Exploration through the Arts.

[18] Adapted from Oregon Department of Education. (2016). *Oregon health education standards*, 3.1, 5.1

Food & Environment 5

Understand how food production and food waste impacts our environment.

6-8 Research the impact of different food production systems, such as organic, sustainable, and conventional, and their impact on the environment.[19]

What this looks like: *Research different food production systems and their impacts on the environment, both positive and negative. Craft an argumentative essay or engage in Socratic Seminar or debate to advocate for various food production systems and consider which is the most sustainable.*

NYC Standards Connections:

Science:
MS-ESS3-2, MS-ESS3-3, MS-ESS3-4, MS-ESS3-5

Recommended Texts:

Good Food, Bad Waste by Erin Silver
Climate Change and Food Production by Jodie Mangor
Eyes Wide Open by Paul Fleishman

Where to Teach: SCALE Science: Grade 8, Imagine Learning: Grade 8

NYC CORE CURRICULUM CONNECTIONS:

SCALE Grade 8, Unit 5 "Using Engineering and Technology to Sustain Our World" asks students to consider what humans are doing to harm plants, animals, and Earth, and what can be done about it. Students look at various effects of human consumption and overpopulation, research engineering solutions that mitigate these effects.

Imagine Learning, Grade 8, Module 2, Unit 1 "Build Background: Food Choices" "Where does our food come from? How do we analyze arguments about how food should be grown and processed? What factors influence our access to healthy food? How do we research this? What factors should we prioritize when making choices about our food? How do we share these recommendations with others?" These questions are centered in this module, in which students research both sides of these complex issues and formulate opinions supported by evidence and reasoning.

Imagine Learning, Grade 8, Module 2, Unit 2 "Research Access to Healthy Food" Students explore factors affecting food access in America by investigating GMOs and a chosen secondary topic, such as pesticides, organic food, high-fructose corn syrup, or food deserts. The module begins with a class-wide study of GMOs to teach essential research techniques. Students then apply these methods independently to their chosen topic, write an explanatory essay on its impact, and conclude the unit by exchanging knowledge through peer-led mini-lessons.

Wit & Wisdom, Grade 6, Module 1 Students read *Out of the Dust*, by Karen Hesse, which takes place in the Great Depression and is specifically linked to the lack of diversification of farming techniques in the 1930s that led to the dust bowl. This is a great opportunity to highlight how overfarming influenced the environment - and ultimately people.

[19] Adapted from UC Davis Center for Nutrition in Schools. (n.d.). *Nutrition education competencies*, 5-6.

Food & Environment 5

Understand how food production and food waste impacts our environment.

9-12

Explain what makes a food system sustainable and analyze the benefits and challenges of different food production systems as they relate to environmental sustainability.[20]

What this looks like:

Research and analyze benefits and challenges different food production systems, such as organic, sustainable, and conventional, and consider: How does each impact food availability? How does each impact the environment? Describe the pros and cons of various food designations (i.e. "organic", "free range", "non-GMO", "contains bioengineered ingredients").

NYC Standards Connections:

Science:
HS-LS2-2, HS-LS2-5, HS-LS2-6, HS-LS2-7, HS-LS4-6

Recommended Texts:

Lost Feast: Culinary Extinction and the Future of Food by Lenore Newman
Diet for a Changing Planet by Sue Heavenrich, Christy Mihaly
The Omnivore's Dilemma by Michael Pollan
The Omnivore's Dilemma: Young Readers' Edition

Where to Teach: Biology; Social Studies: Grades 9, 11; English: Grade 12

NYC CORE CURRICULUM CONNECTIONS:

New Visions Biology, Unit 6, "Woolly Mammoth" Students explore ecosystem resilience by comparing kelp forests and urchin barrens, two stable habitats that can occupy the same space and change into one another. By analyzing how one environment transitions into the other, students uncover how ecosystems recover from disturbances or why they sometimes fail to bounce back.

New Visions Biology, Unit 6, "Woolly Mammoth" Students explore organism extinction by studying the passenger pigeon, which died out over a century ago. After examining how this bird originally stabilized its environment, students evaluate modern efforts to bring it back. They investigate the ecological effects of de-extinction, alongside the ethical, cultural, technological, and financial costs of using this method to fight biodiversity loss.

Passport to Social Studies, Grade 10, Unit 6, Days 9 - 11, Periodizing the Anthropocene Students analyze and synthesize sources to make a claim about periodization, establishing the beginning of the Anthropocene, including readings to understand the ecological impact of industrialization

Passport to Social Studies, Grade 11, Unit 3, Day 8, Causation: Technology and Westward Expansion Students assess the impact of technological advances and westward expansion on the environment of the American west.

ELA Regents Part 2 Practice (Argument): Read four texts about food production and waste and sustainability, develop an argument (and distinguish it from alternate/opposing claims), use evidence from three of the texts to support the argument.

HMH Into Literature, Grade 12, Unit 5 "An Era of Rapid Change" Students read literature about the Industrial Revolution, including "Evidence of Progress" by Thomas Babington Macaulay.

[20] Adapted from New York State Education Department. (n.d.). Middle Level Career and Technical Education (2023). *Family and Consumer Sciences: Food Systems and Production* and UC Davis Center for Nutrition in Schools. (n.d.). *Nutrition education competencies*, 9-12.

Food & Environment 6

Make choices and encourage others to make choices that have a positive impact on the environment.

K-2	**Encourage peers and community members to make choices that have a positive impact on the environment and community.**
3-5	**Create an action plan to encourage peers and community members to make choices that have a positive impact on the environment and community**
6-8	**Research how personal food-related choices (including food waste) may have a positive or negative impact on the environment, and identify action steps that youth can take in favor of positive impact.**
9-12	**Explain how various technological advances in the food supply chain affect the global food supply and the environment in positive and/or negative ways and take action to make a positive impact on an aspect of the local or global food supply[21] and take action to make a positive impact on an aspect of the local or global food supply.**

EQUITY SPOTLIGHT:

☀ Action plans that focus on collecting food for food drives or food banks can be challenging for students who face food insecurity, as they can unintentionally "other" students or leave out students who cannot afford to contribute (or who would be on the receiving end). Focus on ways that students can encourage others to make a positive impact locally within the school community. If older students' action projects center around food collection or distribution per their choice, support the efforts without any requirement for peers to contribute.

[21] Adapted from New York State Education Department. (n.d.). Middle Level Career and Technical Education (2023). *Family and Consumer Sciences: Food Systems and Production*

Food & Environment 6

Make choices and encourage others to make choices that have a positive impact on the environment.

K-2

Encourage peers and community members to make choices that have a positive impact on the environment and community (i.e. recycling, composting, volunteering in a community garden, using SNAP/EBT/Healthbucks at Greenmarket)

What this looks like: *Learn about recycling or composting and then make a poster to encourage others to recycle or compost.*

NYC Standards Connections:

Science:
K-ESS2-2, K-ESS3-1, K-ESS3-3, 2-LS2-2

Recommended Texts:

The Mess That We Made by Michelle Lord
Gifts from the Garbage Truck by Andrew Larsen
What Grew In Larry's Garden by Laura Alary

Where to Teach: Advisory or Morning Meeting

NYC CORE CURRICULUM CONNECTIONS:

See Food & Environment 5 Curriculum Connections, and extend those to include a hands-on action project, such as a poster or school announcement.

RIGHT: Learning at the Farmer market!

Food & Environment 6

Make choices and encourage others to make choices that have a positive impact on the environment.

3-5

Create an action plan to encourage peers and community members to make choices that have a positive impact on the environment and community (i.e. create a poster campaign, design and hand out brochures, write and film a series of PSAs)

What this looks like:

Volunteer in the school garden and create a survey for other students to gather data on how kids feel about the garden. Make a poster campaign to share the data and encourage other people to get involved in gardening. Research a topic of environmental concern and develop a podcast or school announcement series to educate peers about the topic.

NYC Standards Connections:

Science:
3-LS3-2, 3-LS4-4, 4-ESS3-1, 4-ESS3-2, 5-LS2-1

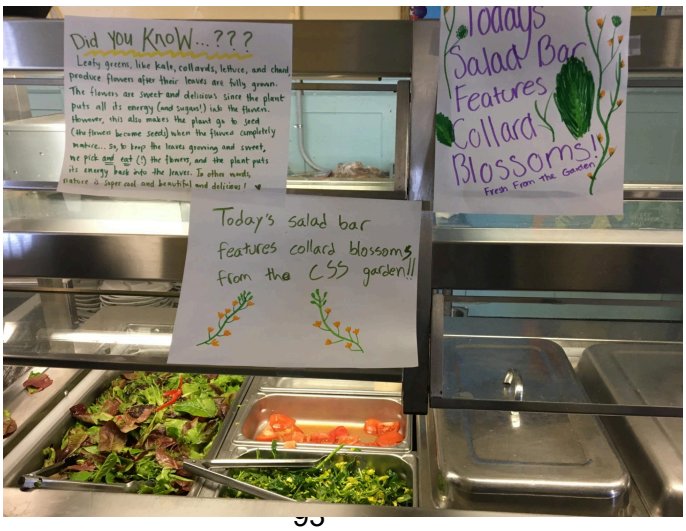
Recommended Texts:

What a Waste by Jess French
Pickles and Parks: A Reader's Theatre Script by Nancy Wallace
Start Now! by Chelsea Clinton
How to Make a Better World by Keilly Swift
Climate Action and What We Can Do by Seymour Simon

Where to Teach: Advisory or Morning Meeting, or integrated into Literacy, Math, or Art classes.

NYC CORE CURRICULUM CONNECTIONS:

See Food & Environment 5 Curriculum Connections, and extend those to include a hands-on action project, such as a podcast, survey, or poster campaign.



RIGHT: Student posters celebrate School garden vegetables in the school salad bar

Food & Environment 6

Make choices and encourage others to make choices that have a positive impact on the environment.

6-8

Research how personal food-related choices (including food waste) may have a positive or negative impact on the environment, and identify action steps that youth can take in favor of positive impact (i.e. composting, choosing fresh fruits and vegetables over processed foods, eating locally grown food when available - such as on a salad bar at school, participating in "Meatless Mondays" in the cafeteria, refilling a water bottle).

What this looks like: *Research the impact of food production or food waste and make brochures to hand out to classmates to educate on food waste and share simple steps to make a positive impact.*

NYC Standards Connections:

Science:
MS-ESS3-2, MS-ESS3-3, MS-ESS3-4, MS-ESS3-5

Recommended Texts:

Good Food, Bad Waste by Erin Silver
Kids Fight Climate Change by Martin Dorey
Make Your Mark, Make a Difference by Joan Marie Galat
You are Mighty: A Guide to Changing the World by Caroline Paul

Where to Teach: SCALE Science: Grade 8, Imagine Learning: Grade 8

NYC CORE CURRICULUM CONNECTIONS:

Imagine Learning, Grade 8, Module 2, Unit 1, "Build Background: Food Choices This module explores Food Choices by addressing several core questions: Where does our food come from? How should it be produced? What impacts our access to healthy food, and how do we research it? What should guide our dietary decisions, and how do we share those ideas? Through these questions, students learn to research deeply, analyze complex food dilemmas, and build evidence-backed arguments.

Imagine Learning, Grade 8, Module 2, Unit 3, "Write an Argument: Healthy Food Choices" Students analyze the language in *The Omnivore's Dilemma* to uncover the author's message. Reflecting on the various food topics studied so far, students evaluate different agricultural and dietary choices. Ultimately, they begin forming their own evidence-based opinions on which food practices best benefit themselves and their local communities.

Imagine Learning, Grade 8, Module 2, Unit 3 (CONTINUED FROM LEFT): "For the final assessment, students compose an argumentative essay to defend their recommended food practices. They prepare by studying a model essay, outlining, and drafting both a practice and final version. As a performance task, students design an infographic and talking points to pitch their arguments during roundtable presentations with local community members.

SCALE Grade 8, Unit 5 "Using Engineering and Technology to Sustain Our World" asks students to consider what humans are doing to harm plants, animals, and Earth, and what can be done about it. Students look at various effects of human consumption and overpopulation, research engineering solutions that mitigate these effects.

Food & Environment 6

Make choices and encourage others to make choices that have a positive impact on the environment.

9-12

Explain how various technological advances in the food supply chain affect the global food supply and the environment in positive and/or negative ways (i.e. fertilizer, antibiotics, plastic packaging, shipping)[22] and take action to make a positive impact on an aspect of the local or global food supply.

What this looks like:

Engage in scientific investigation and research to understand how a specific technological advance affects the global food supply and environment and present research to peers. Take part in hands-on environmental action projects, such as growing a community garden, cleaning up a waterfront area, or researching and presenting findings on a topic of environmental importance to the community.

NYC Standards Connections:

Science:
HS-LS2-2, HS-LS2-5, HS-LS2-6, HS-LS2-7, HS-LS4-6

Recommended Texts:

The Omnivore's Dilemma: Young Readers Edition by Michael Pollan
How the World Eats by Julian Baggini
Students Taking Action Together by Fullmer et. al. (for teachers)
Tiny Gardens Everywhere by Kate Brown

Where to Teach: New Visions Biology; EL

NYC CORE CURRICULUM CONNECTIONS:

New Visions Biology, Unit 6 "Woolly Mammoth" Passenger Pigeon This unit explores the feasibility, methods, and rationale behind de-extinction, using the woolly mammoth and passenger pigeon as core examples. Students analyze how species loss damages ecosystems, using the century-old extinction of the passenger pigeon as a case study. After evaluating an active organizational proposal to resurrect the pigeon, students investigate the potential environmental impacts of its return. The unit concludes by weighing the ecological, ethical, cultural, technological, and financial trade-offs of using de-extinction to combat biodiversity loss.

ELA Regents Part 3 (Text-Analysis Response): Read text about how issues like food waste and GMOs affect the environment; identify the author's central idea, analyze their use of one writing strategy, support analysis with textual evidence.

New Visions Biology, Unit 2, "Humans vs Bacteria" Antibiotic Resistance Scientists recently found that bacteria in isolated environments, untouched by modern antibiotics, already possess resistance to common medicines. Students investigate the causes and mechanisms of this phenomenon. They examine why global antibiotic resistance is rising—including the major role of agricultural overuse—and analyze how human-driven environmental changes accelerate this evolution, posing a severe threat to human health.

New Visions Biology, Food for All - Students evaluate the reasons for ultra processed food, the effect of processed food on rate of decomposition, and evaluate if processed foods meet adequate dietary needs.

HMH Into Literature, Grade 12, Unit 4 "Emotion & Experimentation" In considering "How can Science Go Wrong?", texts include an excerpt from Mary Shelley's *Frankenstein* - presenting an opportunity to tie in modifications in science - like GMOs in our food system.

[22] Adapted from New York State Education Department. (n.d.). Middle Level Career and Technical Education (2023). *Family and Consumer Sciences: Food Systems and Production*

Internal & External Influences on Food

Recognizing internal & external influences helps us make informed food decisions.

Students will:

1. Recognize hunger, fullness, and thirst cues and their influence on food-related decision-making.
2. Explore mindful eating approaches to understand how what we eat makes us feel.
3. Recognize media & marketing's influence on food choices.
4. Recognize the influence of other people on food choices.
5. Analyze how economic and social factors influence food choices.

Internal & External Influences on Food 1

Recognize hunger, fullness, and thirst cues and their influence on food-related decision-making.

K-2 Identify the body signals that tell you when you're hungry or thirsty and when you're full and hydrated.

3-5 Explain how the body signals that tell people when they are hungry or thirsty and when they are full and hydrated can inform nutrition-related decision-making.

6-8 Describe how you feel when you have eaten and are well-hydrated, and explain how you can respond to hunger and fullness cues to best take care of your body.

9-12 Identify school-based barriers that may prevent people from responding to hunger, fullness, and thirst cues and identify ways to overcome these barriers (i.e. having school lunch scheduled early/late, stress before a test, no place to refill water bottles, etc.)

EQUITY SPOTLIGHT:

- This standard is specifically written for health classroom conversations. It can be triggering to students who face disordered eating or food insecurity. Focus on external school-based barriers to fullness and hydration rather than personal failures or food insecurity, as a way to model the action planning and goal setting with more neutral concepts. Build a mind-body connection so students are aware of the cues that tell them to eat or hydrate, and can recognize the resources that are in the school community.
- See Food & Health for more specific standards around nutritious food choices. These two sections can be integrated to include health concepts in tandem with decision making.

Internal & External Influences on Food 1

Recognize hunger, fullness, and thirst cues and their influence on nutrition-related decision-making.

K-2

Identify the body signals that tell you when you're hungry or thirsty and when you're full and hydrated.

What this looks like: *Invite students to explain how their bodies feel when hungry or thirsty - or full and hydrated.*

NYC Standards Connections:

Health:
NPA 1.6

Recommended Texts:

I'm Hungry! Tengo Hambre! by Angela Dominguez
Giant Parsnip Soup by Daniela Sosa
I'm Hungry by Elise Gravel
Your Body is Awesome by Sigrun Danielsdottir

Where to Teach: K - Health

NYC CORE CURRICULUM CONNECTIONS:

HealthSmart, Grade K, Lesson 21 "Eating is a Part of Being Healthy" Students identify body signals for hunger and fullness and demonstrate how they feel when they are hungry and full.

Internal & External Influences on Food 1

Recognize hunger, fullness, and thirst cues and their influence on nutrition-related decision-making.

3-5

Explain how the body signals that tell people when they are hungry or thirsty and when they are full and hydrated can inform nutrition-related decision-making.

What this looks like: *Discuss how being too hungry or too full can affect us and how we can use various opportunities during the school day to prevent negative outcomes.*

NYC Standards Connections:

Health:
NPA 1.2, 1.8

Recommended Texts:

No Kimchi for Me! by Aram Kim
What Happens to a Hamburger? by Paul Showers

Where to Teach: 3 - Health

NYC CORE CURRICULUM CONNECTIONS:

HealthSmart, Grade 3rd, Lesson 17 "My Healthy Food Choices" Students identify cues from their body that tells them they are hungry or full.

Internal & External Influences on Food 1

Recognize hunger, fullness, and thirst cues and their influence on nutrition-related decision-making.

6-8 Describe how you feel when you have eaten and are well-hydrated, and explain how you can respond to hunger/fullness cues to best take care of your body.

What this looks like: *Have a discussion with students to identify how students feel when they have eaten and are hydrated and how they feel when they have not. Identify school-based opportunities during the day to hydrate or eat (i.e. school breakfast, a trip to a water fountain after PE class, school lunch, snack in after school, etc.)*

NYC Standards Connections:

Health:
NTR 1.1, 1.5, 1.9, 1.13, 6.1, 4.1, 4.2, 5.1

Recommended Texts:

The Intuitive Eating Workbook for Teens by Elyse Resch

Where to Teach: MS - Health

NYC CORE CURRICULUM CONNECTIONS:

HealthSmart MS L16 "My Healthy Eating and Physical Activity Goal" Students set a goal around healthy eating or physical activity and track it in L17 “Tracking my Progress”

Internal & External Influences on Food 1

Recognize hunger, fullness, and thirst cues and their influence on nutrition-related decision-making.

9-12

Identify school-based barriers that may prevent people from responding to hunger, fullness, and thirst cues and identify ways to overcome these barriers (i.e. having school lunch scheduled early/late, stress before a test, no place to refill water bottles, etc.)

What this looks like: *A discussion of the school-based challenges students might face to eating and hydrating, and a discussion of ways to overcome these barriers.*

NYC Standards Connections:

Health:
NPA 1.5, 1.8, 1.7, 6.1, 5.1, 5.2, 5.3

Recommended Texts:

The Intuitive Eating Workbook by Evelyn Tribole and Elyse Resch
The Intuitive Eating Workbook for Teens by Elyse Resch
Savor Mindful Eating, Mindful Life by Thich Nhat Hanh and Lilian Cheung

Where to Teach: HS - Health

NYC CORE CURRICULUM CONNECTIONS:

HealthSmart HS L10 "My Healthy Eating and Physical Activity Goal" Students learn how to write a SMART goal around healthy eating or physical activity. They track progress in L11 “Tracking my Progress”

Internal & External Influences on Food 2

Explore mindful eating approaches to understand how what we eat makes us feel.

K-2 **Describe food using the five senses.**

3-5 **Use specific vocabulary to articulate how food smells, tastes, looks, sounds, and feels.**

6-8 **Practice skills for mindful eating using the five senses and explain how mindful eating can help you take care of your body.**

9-12 **Analyze the effects of mindful eating on nutrition-related beliefs and behaviors.**

EQUITY SPOTLIGHT:

- ☀ Always make engaging with food and tasting food optional for students. There are many reasons students may not want to taste or engage with a food, including disordered eating patterns, triggers due to taste/smell/feel, religious restrictions, etc. - and students should not be required to share their reasoning for not engaging.
- ☀ Recognize that sensory experiences can trigger other feelings or memories, both positive and negative, from students' lives. Be sure you are comfortable with managing students' varied feelings, and engage your school counselor prior to the exercise so that students have a safe space to go to if they happen to have a specific trigger that is difficult to process.

Internal & External Influences on Food 2

Explore mindful eating approaches to understand how what we eat makes us feel.

K-2

Describe food using the five senses.

What this looks like: *Reading texts that utilize the five senses to describe food, and describing food of some kind using the five senses - a great activity for smelling and describing spices, a new menu item in the cafeteria, or herbs from a school garden!*

NYC Standards Connections:

Language Arts:
R4

Recommended Texts:

Chaiwala! Written by Priti Birla Maheshwari; art by Ashley Barron
Every Night is Pizza Night Written by J. Kenji; illustrated by Gianna Ruggiero
The Ugly Vegetables by Grace Lin
Thank you, Omu! by Oge Mora
Plátanos Are Love by Alyssa Reynoso-Morris
Tomatoes for Neela by Padma Lakshmi

Where to Teach: Literacy / Science

Internal & External Influences on Food 2

Explore mindful eating approaches to understand how what we eat makes us feel.

3-5 Use specific vocabulary to articulate how food smells, tastes, looks, sounds, and feels.

What this looks like: *Literacy or Science extension lesson in which students use the five senses to engage with spices, herbs, or other food items and describe using vivid language.*

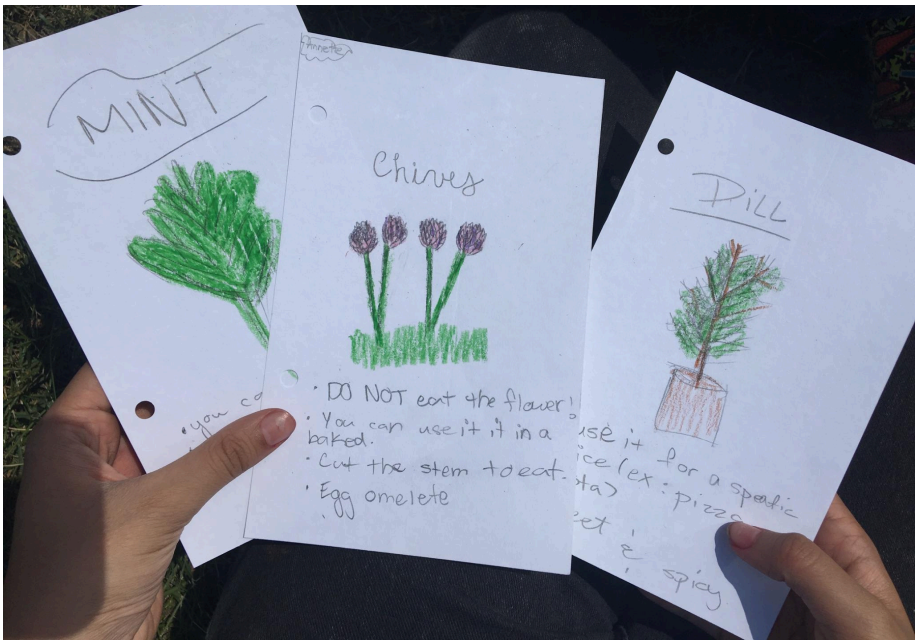
NYC Standards Connections:

Health:
NPA 1.8

Recommended Texts:

Okra Stew: A Gullah Geechee Family Celebration by Natalie Daise
Paletero Man / !Que Paletero tan Cool! Written by Lucy Diaz; illustrated by Micah Player; translated by la Dra. Carmen Tafolla
Watercress written by Andrea Wang, illustrated by Jason Chin
Soul Food Sunday by Winsome Bingham, illustrated by C. G. Esperanza
Every Night is Pizza Night by J. Kenji Lopez-Alt

Where to Teach: Literacy / Science



RIGHT: students write descriptions of herbs after exploring them using their five senses

Internal & External Influences on Food 2

Explore mindful eating approaches to understand how what we eat makes us feel.

6-8

Practice skills for mindful eating using the five senses and explain how mindful eating can help you take care of your body.

What this looks like: *Advisory exercise in which students engage in a mindful eating practice, utilizing their five senses to fully experience a food (such as an apple or orange slice).*

NYC Standards Connections:

Health:
NTR 1.9

Recommended Texts:

No Ordinary Apple: A Tasty Story About Eating Mindfully by Sara Marlowe; illustrated by Philip Pascuzzo

Where to Teach: Health Class, Advisory

EQUITY SPOTLIGHT:

☀ When engaging students with any tasting or mindful eating practice, do not force students to eat the food if they do not want to. Allow students the option of engaging using whichever senses are comfortable for them, rather than requiring participation, as there are a variety of reasons (including disordered eating patterns) that may make it challenging for a student to participate.

RIGHT: Apples are a great tool for mindful eating experiences!

Internal & External Influences on Food 2

Explore mindful eating approaches to understand how what we eat makes us feel.

9-12 Analyze the effects of mindful eating.

What this looks like:

Students engage in a mindful eating practice and then create their own mindful eating script to guide peers or younger students in a mindful eating activity. Have students make a food journal connecting what they eat and how they feel after eating - not to assess their food choices, but to have students personally consider the relationship between food and mindset / feelings.

NYC Standards Connections:

Health:
NPA 7.2

Recommended Texts:

"Meditations on an Apple" by Janet Brown, Center for Ecoliteracy (an example mindful eating script for a teacher to use)
Mindful Eating: Stop mindless eating and learn to nourish body and soul by Rachel Bartholomew and Mandy Pearson
Food for Thought by Rachel Bartholomew and Mandy Pearson

Where to Teach: Health

EQUITY SPOTLIGHT:

☀ When engaging students with any tasting or mindful eating practice, do not force students to eat the food if they do not want to. Allow students the option of engaging using whichever senses are comfortable for them, rather than requiring participation, as there are a variety of reasons (including disordered eating patterns) that may make it challenging for a student to participate.

Internal & External Influences on Food 3

Recognize media & marketing's influence on food choices.

K-2 Identify ways that media such as cartoon characters and advertisements can influence food choices.

3-5 Analyze how cartoons and celebrity endorsements are food and beverage marketing techniques used to target certain audiences - and analyze what specific foods are marketed to children and why.

6-8 Analyze how media, including advertising, social media, influencer endorsements, and product placement influence food choices - and assess the validity of nutrition-related information, products, and services.

9-12 Analyze how media, social media, and marketing affect nutrition-related beliefs, behaviors, body image, and personal health.

EQUITY SPOTLIGHT:

- ☀ Be sure that you are representing accurate information to students. If something comes up, like a social media fad or diet that you are not scientifically sure about, tell students that you are not sure and encourage research before believing!
- ☀ Recognize that school lunch gets a negative perception from how it is portrayed in the media; use this as an opportunity for students to build a positive relationship with school food.

Internal & External Influences on Food 3

Recognize media & marketing's influence on food choices

K-2

Identify ways that media such as cartoon characters and advertisements can influence food choices.

What this looks like: *Students look at food advertisements or packages advertised toward children (i.e. cereal boxes with cartoon characters) discuss how advertising influences food choices. Students can create their own advertisement for a favorite fruit or vegetable, specifically thinking about selling it to children their own age!*

NYC Standards Connections:

Health:
NPA 2.1

Recommended Texts:

What's for Lunch? by Andrea Curtis
Duck! Rabbit! By Amy Krouse Rosenthal

Where to Teach: Health, Grade 2

Internal & External Influences on Food 3

Recognize media & marketing's influence on food choices

3-5

Analyze how cartoons and celebrity endorsements are food and beverage marketing techniques used to target certain audiences - and analyze what specific foods are marketed to children and why.

What this looks like:

Students discuss why they choose to eat certain foods, and consider ways that marketing targets children. They can look at grocery store circulars or other advertisements to consider what kinds of products are marketed to children, and analyze why. Have students design a grocery ad or food packaging to sell fresh fruits and vegetables to children.

NYC Standards Connections:

Health:
NPA 2.1

Recommended Texts:

Can You Believe It? By Joyce Grant
The Most Boring Book Ever by Brandon Sanderson

Where to Teach: Health, Grade 3

NYC CORE CURRICULUM CONNECTIONS:

HealthSmart, Grade 3, L21 "Food Choices & Influences" Students consider their favorite foods and how these selections were informed by outside influences - specifically thinking about how family, friends, advertising, and media influence food choices.

Internal & External Influences on Food 3

Recognize media & marketing's influence on food choices

6-8

Analyze how media, including advertising, social media, influencer endorsements, and product placement influence food choices - and assess the validity of nutrition-related information, products, and services.

What this looks like:

Students analyze how marketing, including social media, influences food choices, and write a letter to a food company to share ideas for a marketing campaign that supports healthful eating for children. Explore how school food is portrayed in media and consider ways to positively market school lunch to younger students, such as by creating posters for the lunchroom, formatting menus, or writing a children's book.

NYC Standards Connections:

Health:
NTR 2.1, 3.2

Recommended Texts:

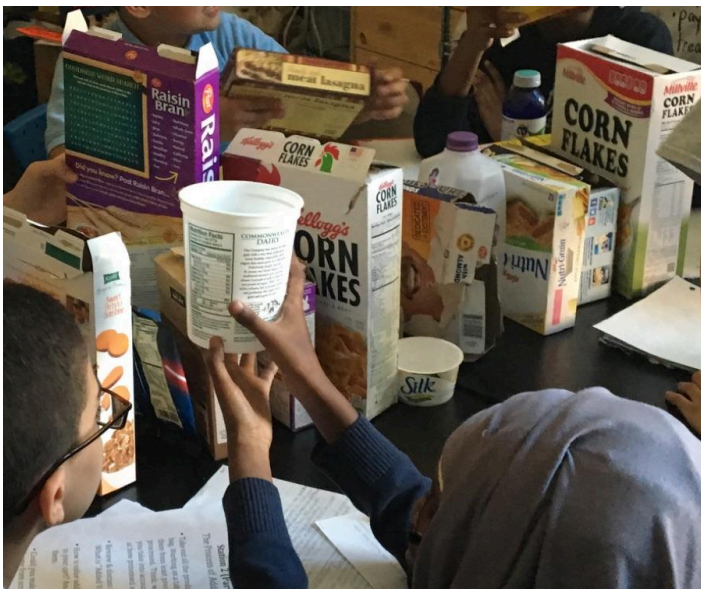
Eat This! by Andrea Curtis
Chew on This! by Eric Schlosser and Charles Wilson

Where to Teach: Health, Art

NYC CORE CURRICULUM CONNECTIONS:

HealthSmart, MS, L9 "What Influences my Food Choices?" Students brainstorm influences on their food choices and discuss how different influences, like media and advertising, can be positive or negative.

Passport to Social Studies, Grade 8, Unit 2, Lesson 11, The Jungle Students analyze and discuss the negative impact of industrialization on society through a close reading of The Jungle by Upton Sinclair.



ABOVE: Students examine the messaging on food packages.

Internal & External Influences on Food 3

Recognize media & marketing's influence on food choices

9-12

Analyze how media, social media, and marketing affect nutrition-related beliefs, behaviors, body image, and personal health.

What this looks like:

Students look at examples of nutrition-related marketing and social media influencers, and discuss whether the claims made are valid. Create a PSA or poster project to educate peers about looking critically at nutrition-related marketing, media, and social media. Consider how school lunch is portrayed in the media and how it could be more positively represented to encourage kids to eat school lunch.

NYC Standards Connections:

Health:
NPA 2.1, 2.2, 3.2

Recommended Texts:

Everybody Eats by Maryanne LeGreco and Niesha Douglas

Foodwise: A Whole Systems Guide to Sustainable and Delicious Food Choices By Gigi Berardi

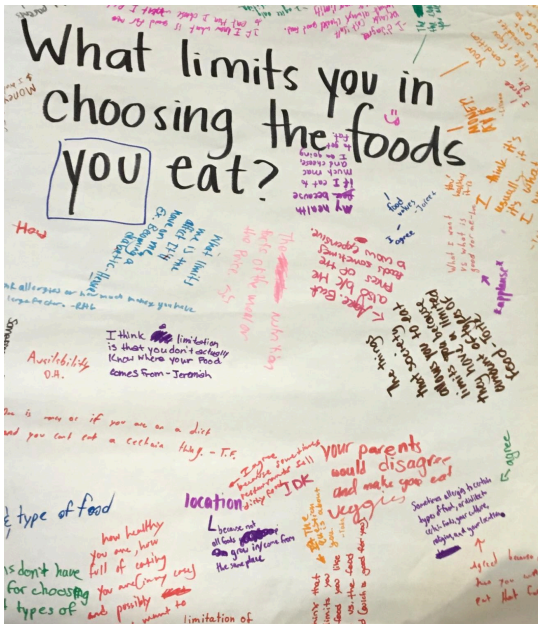
Freckleface Strawberry: Lunch, or What's That by Julianne Moore *(This is a text written for elementary school children. Have HS students read this text to analyze how school lunch is represented in media and think about how they could create narratives for younger students that positively represent school lunch!)*

Where to Teach: Health

NYC CORE CURRICULUM CONNECTIONS:

HealthSmart, HS, L9, "Finding Accurate Information"
Students discuss what makes information about nutrition / physical activity accurate or not, and learn 5 questions they can ask to assess the validity of information

HealthSmart, HS, L13, "Influences on Body Image"
Students explore what factors influence body image, including friends, family, and media. They then consider ways that they can support others in having a positive body image.



RIGHT: Students engage in a "chalk talk" around Influences on their food choices.

Internal & External Influences on Food 4

Recognize the influence of other people on food choices.

K-2 Identify ways that other people (such as friends, caregivers, and teachers) can influence food choices.

3-5 Describe how peer influence and social environment impact food choices.

6-8 Explain how culture, stigmas, peers, friends, and family influence nutrition-related beliefs and choices.

9-12 Evaluate the influence of family, peers, school, community, culture, and social norms on personal values and beliefs about nutrition, physical activity, and body image, and analyze how these influences influence personal health.

EQUITY SPOTLIGHT:

☀ Discussing the effect of peers and social environment on food choices may be a trigger for students facing eating disorders or disordered eating. If you are teaching health and do not have a nutrition background, you're encouraged to connect with professionals prior to teaching potentially sensitive topics, and to have a safe space (i.e. a school counselor) available for students who may need support.

Internal & External Influences on Food 4

Recognize the influence of other people on food choices.

K-2

Identify ways that other people (such as friends, caregivers, and teachers) can influence food choices.

What this looks like: *Brainstorm different ways that other people can influence food choices, both positively and negatively.*

NYC Standards Connections:

Health:
NPA 1.4

Recommended Texts:

Miss Betti, What is This? by Lela Nargi

Where to Teach: Health, K

NYC CORE CURRICULUM CONNECTIONS:

HealthSmart, Grade K, Lesson 22 "You can Choose to Eat Healthy Foods" After choosing some "healthy foods" students like to eat, they identify people who can help them make healthy food choices, like a friend or caregiver.

RIGHT: A teacher can be the reason students are willing to try new foods!

Internal & External Influences on Food 4

Recognize the influence of other people on food choices.

3-5 Describe how peer influence and social environment impact food choices.

What this looks like: *Have students think through their own food experiences and consider when they first tried certain foods and what peer and social influences contributed to their liking of the food or not liking it. Discuss when peer and social influence can be both positive and negative.*

NYC Standards Connections:

Health:
NPA 8.1

Recommended Texts:

Freckleface Strawberry: Lunch, or What's That by Julianne Moore

Where to Teach: Health, Grade 3

NYC CORE CURRICULUM CONNECTIONS:

HealthSmart, Grade 3, L21, "Food Choices & Influences" Students consider their favorite foods and how these selections were informed by outside influences - specifically thinking about how family, friends, advertising, and media influence food choices.

Internal & External Influences on Food 4

Recognize the influence of other people on food choices.

6-8 Explain how culture, stigmas, peers, friends, and family influence nutrition-related beliefs and choices.

What this looks like: *Students consider how other people in their community both positively and negatively influence their food choices and discuss ways to be a positive influence on their own peers, friends, and family members.*

NYC Standards Connections:

Health:
NTR 2.1

Recommended Texts:

Taking Up Space by Alyson Gerber

Where to Teach: MS Health

NYC CORE CURRICULUM CONNECTIONS:

HealthSmart, MS, L7, "Eating Healthy at Fast Food Restaurants" Students analyze the calories, sugar, and salt of some example fast food meals and then consider healthier alternatives.

HealthSmart, MS, L9, "What Influences my Food Choices?" Students brainstorm influences on their food choices and discuss how different influences, including family and friends, can be positive or negative.

HealthSmart, MS, L11, "Body Image Basics" Students discuss what makes a positive or negative body image, explain the importance of a positive body image, and analyze what influences body image'

ABOVE: Students prepare food together, as a way to build positive beliefs about food - and real world skills!

Internal & External Influences on Food 4

Recognize the influence of other people on food choices.

9-12

Evaluate the influence of family, peers, school, community, culture, and social norms on personal values and beliefs about nutrition, physical activity, and body image, and analyze how these influences influence personal health.

What this looks like: *Students brainstorm their personal values and beliefs about nutrition, physical activity, and body image and then consider where these beliefs come from. They create a strategy to have a positive influence on peers and community members' beliefs about nutrition (i.e. poster, brochure, social media post, etc.)*

NYC Standards Connections:

Health:
NPA 2.1

Recommended Texts:

Louder Than Hunger by Jon Shu

Where to Teach: HS Health

NYC CORE CURRICULUM CONNECTIONS:

HealthSmart, HS, L13,"Influences on Body Image" Students explore what factors influence body image, including friends, family, and media. They then consider ways that they can support others in having a positive body image.

HealthSmart, HS, L15, "Disordered Eating & Compulsive Exercising" Students learn about the characteristics, signs, symptoms, and risks of anorexia nervosa, bulimia nervosa, binge eating and compulsive exercise. They consider how to support a friend who might be struggling with one of these.

HealthSmart, HS, Unit Assessment 2, "Eating & Physical Activity Health Survey" Students work in teams to interview a friend and then create an eating and physical activity action plan for the friend, including a week-long menu recommendation, physical activity plan, and monitoring tools.

HMH Into Literature, Grade 9, Unit 2 "Breaking Through Barriers" Students read "The Power of a Dinner Table," an editorial by David Brooks about a family who brings together young people struggling with food insecurity, homelessness, and poverty to come together around their dinner table. This is a powerful read to highlight both the power of food to bring people together and the humanizing connections that can come through open-mindedly sharing food.

Internal & External Influences on Food 5

Analyze how economic and social factors influence food choices.

K-2	**Identify ways that our communities (neighborhood, school community, classroom community) can impact food choices.**
3-5	**Identify factors that influence food availability, such as seasonality, access, and cost.**
6-8	**Explain how economics and food access can influence nutrition and articulate resources that support food security.**
9-12	**Analyze the political, economic, social, and environmental factors that influence our food system and food consumption on overall, community-based, and personal levels.[23]**

EQUITY SPOTLIGHT:

☀ Recognize that food insecurity may come up in these conversations - be sensitive to how food insecurity is discussed, as students in the classroom may be facing food insecurity. Be mindful of not "othering" or framing in terms of "us" v. "them" when it comes to food insecurity. When offering resources, share with everyone in the class rather than framing as "resources only for students who need it."

[23] Adapted from Oregon Department of Education. (2016). *Oregon health education standards*, HS.1

Internal & External Influences on Food 5

Analyze how economic and social factors influence food choices.

K-2

Identify ways that our communities (neighborhood, school community, classroom community) can impact food choices.

What this looks like:

Students think about where they can get nutritious food choices (e.g., school lunch) and how they can support one another in trying new foods. When possible, take students on a field trip to a school garden (either at your own school or at another local school).

NYC Standards Connections:

Health:
PHS 3.2

Recommended Texts:

Harlem Grown by Tony Hillery
Saturdays at Harlem Grown by Tony Hilery
Our Little Kitchen by Jillian Tamaki

Where to Teach: Health K, Advisory or Morning Meeting

ABOVE: Celebrating school lunch as a means to build community!

Internal & External Influences on Food 5

Analyze how economic and social factors influence food choices.

3-5 Identify factors that influence food availability, such as seasonality, access, and cost.

What this looks like: *Students consider what foods are available at different locations, such as a grocery store, farmer market, bodega, and discuss why these choices are available at each location. When possible, take a field trip to a local farmers market.*

NYC Standards Connections:

Health
NPA 2.2

Recommended Texts:

One Hen and Then by Katie Smith Milway

Where to Teach: Passport to Social Studies: Grade 4, 5

NYC CORE CURRICULUM CONNECTIONS:

Passport to Social Studies, Grade 4, Unit 5, Lesson 4, Push and Pull: European Immigration from 1840 to 1920
Students examine primary and secondary source documents and images to interpret various "push and pull" factors that brought immigrants from different countries to New York and elsewhere in America including famine and availability of crops.

Passport to Social Studies, Grade 4, Unit 5, Lesson 1, Early Inventions in a Changing America Students examine the causes and effects of technological changes in America between the late 1700s and early 1800s to learn about the growing needs of people in America as well as the challenges facing the nation.

Passport to Social Studies, Grade 5, Unit 2, Lesson 8, The Columbian Exchange Students recognize what happens when different cultures interact, including the exchange of food, crops, and wildlife that result from interactions

Passport to Social Studies, Grade 5, Mexico Case Study, Lesson 8, GMO Corn in Mexico Students examine the impact that genetically modified corn and trading have had on Mexico's economy

Passport to Social Studies, Grade 5, United States Case Study, Lesson 8, From Their Farm to Your Lunchbox Students learn about the economic trade relationship between the United States and South American countries within the context of the banana industry

Passport to Social Studies, Grade 5, Dominican Republic Case Study, Lesson 5, The High Price of Sugar Students generate compelling questions about sugarcane production in the Dominican Republic, then research and synthesize information to respond to the questions

Internal & External Influences on Food 5

Analyze how economic and social factors influence food choices.

6-8 Explain how economics and food access can influence nutrition and articulate resources that support food security.

What this looks like: *Explore the impact of historical events on food access, such as the Columbian Exchange, the Federal Nutrition Bill, the Irish Potato Famine, WWI and WWII, and The Great Depression. Have students learn about resources for food security, such as local pantries, food banks, free fridges, etc. in the neighborhood, and create an "iMap" or pamphlet.*

NYC Standards Connections:

Social Studies:
7.5, 7.4, 8.2, 8.4, 8.5, 8.6, 8.8

Recommended Texts:

Tomatoes on Trial by Lindsay H. Metcalf

Where to Teach: Passport to Social Studies: 7, 8

NYC CORE CURRICULUM CONNECTIONS:

Passport to Social Studies, Grade 7, Unit 1, Lesson 6, The Columbian Exchange Students understand the impact of the Columbian Exchange, including the movement of crops and livestock.

Passport to Social Studies Grade 7, Unit 3, Lesson 9, Government in Action: Taking a Stand Students apply their knowledge of the U.S. Constitution, including state vs. federal powers to examine the federal nutrition bill that oversees food service in school cafeterias

Passport to Social Studies Grade 7, Unit 4, Lesson 13, Immigration: Irish Potato Famine Students analyze primary source documents about the experience of Irish immigrants to explain the impact of the Irish potato famine on the growth of the United States.

Passport to Social Studies Grade 8, Unit 2, Lesson 2, Urban v. Rural Students identify the factors that led to the population decline in rural areas and the population increase in urban areas and its impact on industry and farming.

Passport to Social Studies, Grade 8, Unit 2, Lesson 11, The Jungle Students analyze and discuss the negative impact of industrialization on society through a close reading of *The Jungle* by Upton Sinclair.

Passport to Social Studies, Grade 8, Unit 4, Lesson 3, WWI Propaganda Students analyze and critique war propaganda documents in order to see how the United States tried to shape public opinion at home during World War I, including around food choices.

Passport to Social Studies, Grade 8, Unit 4, Lesson 13, The Great Depression's Impact on Society and New York City Students determine the effects that the Great Depression had on individuals.

Passport to Social Studies, Grade 8, Unit 5, Lesson 4, World War II Propaganda Students analyze and critique World War II propaganda, particularly around food conservation efforts.

SCALE Science, Grade 7, Unit 2 - Task 3 - Natural Resources, Wealth, and Fairness In this social justice task, students recognize the relationship between water, soil, and wealth and create comic strips to show these connections. They apply their learning to food deserts and evaluate challenges of equitable resource distribution.

Internal & External Influences on Food 5

Analyze how economic and social factors influence food choices.

9-12

Analyze the political, economic, social, and environmental factors that influence our food system and food consumption on overall, community-based, and personal levels.[24]

What this looks like: *Research state and local efforts to widen food access both presently (i.e. food based policies, WIC, SNAP, school food, etc.) and in history (i.e. the Pure Food & Drug Act, etc.). Research how discriminatory policies and structural racism create unequal food access.*

NYC Standards Connections:

Social Studies:
10.9, 11.5, 11.7

Recommended Texts:

Unsavory Truth by Marion Nestle
Free Lunch by Rex Ogle*
* The main character in *Free Lunch* is facing food insecurity and stigma around being a student who gets "free lunch" at school. While this text brings up important equity issues surrounding food and food insecurity, be careful of perpetuating stigma around free lunch, and if this text is utilized, pair it with discussion of, or an action project on, destigmatizing school lunch.

Where to Teach: Passport to Social Studies: 9, 10, 11, 12; HS Biology tie-ins

NYC CORE CURRICULUM CONNECTIONS:

Passport to Social Studies, Grade 9, Unit 6, Day 12, Columbian Exchange Students evaluate changes that occurred as a result of the Columbian exchange.

Passport to Social Studies, Grade 10, Unit 6, Day 3, Defining Globalization Students understand the food they eat as examples of living in a global world.

Passport to Social Studies, Grade 11, Unit 3, Day 23, Progressive Action Leads to Legislation Students evaluate progressive responses to economic and social ills, incl. the establishment of the Pure Food and Drug Act.

Passport to Social Studies, Grade 11, Unit 4, Days 11-12, WWI and the American Home Front Students explore the economic, political, social, and cultural impact of WWI on the United States home front.

New Visions Biology, Food for All, Extension Activity Students research community based programs, food deserts, and finding solutions to access healthy food.

EQUITY SPOTLIGHT:

☀ "Food Desert" notes geographic areas where affordable, fresh, nutritious foods are not accessible. "Food Apartheid" was coined by NYC-based food justice activist Karen Washington, to note that a lack of food access is not a natural occurrence, but the result of structural racism and intentional discriminatory policies. "Food Mirage" notes areas where fresh, nutritious food is available but is out of financial reach of most residents, particularly as a result of gentrification (i.e. high-end organic groceries that are not accessible to the original residents of a community). Have a conversation with high schoolers about how these terms resonate and where they have seen examples of them.

[24] Adapted from Oregon Department of Education. (2016). *Oregon health education standards*, HS.1

Food & Health

The foods we eat nourish our bodies.

Students will:

1. Describe how a variety of whole and minimally processed foods provide us with the nourishment we need for our minds and bodies.
2. Understand the importance of hydration.
3. Choose minimally- and less-processed foods more often by gaining the experience and skills to identify what is in the foods available to you.
4. When you eat a food that comes in a package, read the list of ingredients first to understand what it is made from, and know how to read a nutrition label to understand more.

Food & Health 1

Describe how a variety of whole and minimally processed foods provide us with the nourishment we need for our minds and bodies.

K-2 Understand how eating different fruits and vegetables have nutrients that help all parts of our bodies.

3-5 Understand the importance of a variety of foods to help you "Go! Grow! and Glow!"

6-8 Explain how our bodies process and use components of food.

9-12 Explain how a balance of whole and minimally processed foods provide us with the nutrients we need for our bodies and minds; Understand how what we eat becomes part of us, because the nutrients in food help to rebuild, repair, and refuel our cells, tissues, and organs. Explain the function of each part of the digestive system and the pathway of food during digestion.

EQUITY SPOTLIGHT:

- We purposely frame these standards by focusing on providing sound positive nutrition information and understanding, rather than talking about why certain foods are "bad" or "wrong" choices. This way, students will not feel targeted if they or their families regularly access these choices. We seek to give all students understanding about how whole and minimally processed foods support our bodies.
- These standards purposefully offer additional information so that teachers can have a set of nutritionist-defined concepts to bring to students.
- The focus here should be less on prescribing a certain diet or certain foods students should eat, and instead learning about what different foods do for our bodies.

Food & Health 1

Describe how a variety of whole and minimally processed foods provide us with the nourishment we need for our minds and bodies.

K-2

Understand how eating different fruits and vegetables have nutrients that help all parts of our bodies:

- Eat dark green leafy vegetables to keep your bones strong
- Eat orange vegetables, such as carrots, sweet potatoes, and butternut squash to help you see well and have healthy bodies
- Eat yellow fruits and vegetables, like corn, oranges, grapefruit, and peaches to keep your immune system healthy
- Eat red fruits and vegetables, like strawberries, raspberries, tomatoes, apples, beets, and red grapes to protect your body against illnesses
- Eat blue/purple fruits and vegetables, such as blueberries, purple grapes, and eggplant to help your memory stay sharp and give you brainpower

Eat more fruit and vegetables because they have nutrients that help all parts of our body.

Teacher Note: the benefits listed above are not exclusive to a single color of fruit/veggie, but we've highlighted some that illustrate why a variety of fruits and veggies helps give our bodies multiple benefits!

What this looks like: *Learning about the benefits of different colors of fruits and vegetables and trying them whenever possible. When available, grow a variety of colorful produce in the school garden. Draw pictures of favorite fruits or vegetables of each color to make a classroom rainbow of favorites!*

NYC Standards Connections:

Health:
NPA 1.1, 1.2, 1.3

Recommended Texts:

Rainbow Stew by Cathryn Falwell
A is for Apricat by Mauro Getty

Where to Teach: Health - K, 1, Passport to Social Studies: K

NYC CORE CURRICULUM CONNECTIONS:

Healthsmart, Grade K, Lesson 21, "Eating is a Part of Being Healthy" Students discuss how "different foods do different things for your body. Your body needs to eat a variety of foods to help it stay healthy."

HealthSmart, Grade 1, Lesson 21, "I Eat Breakfast Every Day" Students discuss how food fuels their bodies and then discuss how they feel after eating breakfast

HealthSmart, Grade 1, Lesson 23, "Setting a Goal to Eat Breakfast or Drink More Water" Students discuss the barriers to eating healthy breakfasts and drinking water and then select one to do as a goal.

Passport to Social Studies, Grade K, Unit 2, Lesson 1, We Are the Same, We Are Different Students understand that certain attributes make them unique; all people share similarities as well as exhibit differences. Discussion includes how our bodies allow and help us to enjoy activities; activities include completing My Body Makes Me Unique template.

Food & Health 1

Describe how a variety of whole and minimally processed foods provide us with the nourishment we need for our minds and bodies.

3-5

Understand the importance of a variety of foods to help you "Go! Grow! and Glow!"

- "Go! Foods" are grain foods such as bread, cereal, rice, and pasta that give you carbohydrates for energy.
- "Grow! Foods" are proteins such as tofu, beans, nuts, fish, eggs, poultry, and meat, which help our bodies to grow.
- "Glow! Foods" are fruits and vegetables that help give our bodies vitamins, minerals, and phytonutrients to help all of our body processes work!
  - Dark green leafy vegetables keep your bones strong because they have calcium.
  - Orange vegetables, such as carrots, sweet potatoes, and butternut squash help you see well and have healthy cells because they have vitamin A
  - Yellow fruits and vegetables, like corn, oranges, grapefruit, and peaches keep your immune system healthy because they have vitamin C.
  - Red fruits, like strawberries, raspberries, tomatoes, apples, beets, and red grapes protect your body against illnesses because they have antioxidants.
  - Blue/purple fruits and vegetables, such as blueberries, purple grapes, and eggplant help your memory stay sharp and give you brainpower because they have phytonutrients.

What this looks like: *Learn about different Go! Grow! and Glow! foods and have students come up with examples of foods that they enjoy in each category. Draw pictures or make posters for the cafeteria of these various colors of fruits and vegetables as "superheroes" for our bodies.*

NYC Standards Connections:

Health:
NPA 1.1

Recommended Texts:

The Vegetables We Eat by Gail Gibbons
The Fruits We Eat by Gail Gibbons
Our Food: A Healthy Serving of Science and Poems by Grace Lin, Ranida T. McKneally
Alice Waters and the Trip to Delicious by Jaqueline Briggs Martin

Where to Teach: Health - 3

NYC CORE CURRICULUM CONNECTIONS:

HealthSmart, Grade 3, Lesson 19, "Eat Breakfast Every Day" Students read about a fictional character, Morgan, having a morning with and without a healthy breakfast. They then think about what food choices would help Morgan have a healthy breakfast.

Food & Health 1

Describe how a variety of whole and minimally processed foods provide us with the nourishment we need for our minds and bodies.

6-8

Explain how our bodies process and use components of food:

- During digestion, substances in foods move from our small intestines into our blood stream to be absorbed by our bodies.
    - Carbohydrates, fats, and proteins provide us with food energy (measured in calories)
- Foods like fiber-rich fruits and vegetables, whole grains, and beans and water support digestion and enable us to have a healthy microbiome
- We defecate what stays in the digestive tract.
- When the nutrients in foods are used up we urinate out what is left.

What this looks like: *Lessons on how our bodies process and use food during digestion.*

NYC Standards Connections:

Health:
NTR 1.1, 1.2, 1.3, 1.4, 1.9, 1.12

Science:
MS-LS1-3

Recommended Texts:

Digestion! The Musical by Adam Rex
A Garden in Your Belly by Masha D'yans
The Digestive System by Jason Viola
Digestive System by Priyanka Lamichhane
Digestive System by Christine Taylor-Butler
Guts by Percy Leed

Where to Teach: Health - MS, Science - 7

NYC CORE CURRICULUM CONNECTIONS:

HealthSmart, MS, Lesson 5, "Eating Breakfast Every Day" Students discuss the importance of eating breakfast every day and barriers to doing so, identify some breakfast foods they like, and consider healthy options like whole grains, protein, and fruit.

Amplify, Grade 7, "Metabolism" Students take on the role of medical residents to diagnose a fictional patient's needs. Students learn how the digestive, respiratory, and circulatory systems work together to get glucose, oxygen, and amino acids to the cells - and how various medical conditions can affect this. In the process of diagnosing their patient with diabetes, students learn about how the body uses and processes food, with specific exploration of how carbohydrates, fats, proteins, and fiber are broken down in the body and how the digestive system functions.

Amplify, Grade 7, "Microbiome" This unit explores the benefits of a healthy gut microbiome, and the potential challenges of "bad" bacteria in the gut. Students learn about the role of beneficial bacteria and explore a case study of a fecal transplant to understand how a diverse microbiome in the gut supports our bodies

SCALE Science, Grade 7, Unit 1, Task 3, Interacting Subsystems. While this task is mainly about circulatory and respiratory system, the task also involves learning about the six main body systems, which includes the digestive system. Students are expected to understand how different systems work together.

SCALE Science, Grade 7, Unit 3, Task 3, Matter Moves You - Students learn about the chemical reaction of cellular respiration. This is directly connected to use of glucose for ATP energy in the cell.

Food & Health 1

Describe how a variety of whole and minimally processed foods provide us with the nourishment we need for our minds and bodies.

9-12

Explain how a balance of whole and minimally processed foods provide us with the nutrients we need for our bodies and minds:

- Explain the role of macronutrients (carbohydrates, fats, and proteins) and micronutrients (including various vitamins, minerals, and phytonutrients) to maintain all of our bodies' processes
- Explain how a range of different eating patterns (e.g. vegetarian, vegan, cultural/religious diets, etc.), can meet these nutrient needs

Understand how what we eat becomes part of us, because the nutrients in food help to rebuild, repair, and refuel our cells, tissues, and organs.

Explain the function of each part of the digestive system and the pathway of food during digestion:

- **In the mouth, food is** mechanically chewed and chemically broken down by saliva, which is why taking the time to chew your food thoroughly is the first step to get the most nourishment from your food. This also gives your brain time to register that you are full.
- **In the esophagus** strong muscles push the food down to your stomach in a wave-like motion called peristalsis. Drinking water when you eat helps this process.
- **In the stomach** your food turns into a nutrient soup. Powerful acids and enzymes are added while this muscular organ churns, breaking down the parts of your food into smaller components, so they can be used to nourish your body.
- **In the small intestines** the real magic happens as more enzymes continue to break food into its smallest parts, ready for cells to use, and some move out of the digestive system through the intestinal wall.
- **Food gets absorbed in the bloodstream** and is delivered to every single cell in your body. This is where choosing nutrient-dense foods really pays off. Picture all the nutrients in food traveling through your blood to build bone and muscle, repair damaged cells, power your brain, beat your heart, make your skin glow, and keep your energy level high. The quality of the food you eat literally determines the quality of the fuel running through your veins. **After your cells use or store the nutrients from the food you eat, they send waste back into the bloodstream.**
- **Our kidneys** act like a highly advanced filtration system for our bloodstream, and **we urinate out waste and any extra nutrients to keep our system balanced.**
- **What does not get absorbed such as the fiber in fruits and vegetables, whole grain, and beans continues into the colon, or large intestines, and gets mixed with** trillions of beneficial bacteria to build a healthy microbiome, or "gut flora," which is absolutely essential for keeping our immune system strong, regulating our moods, and keeping our digestion comfortable and regular. That is, creating the perfect poop and some gas. Drinking lots of water helps our colon function well.
- **We defecate and pass what stays in the digestive tract**, safely removing undigested waste, dead cells, and bacteria from our bodies.

Food & Health 1

Describe how a variety of whole and minimally processed foods provide us with the nourishment we need for our minds and bodies.

9-12

Explain how a balance of whole and minimally processed foods provide us with the nutrients we need for our bodies and minds.

Understand how what we eat becomes part of us, because the nutrients in food help to rebuild, repair, and refuel our cells, tissues, and organs.

Explain the function of each part of the digestive system and the pathway of food during digestion.

What this looks like: *Plan a diet that meets your cultural connections and food preferences that has plenty of whole plant-based foods, small portions of meat and dairy, and few ultra-processed foods. Engage in a Science investigation exploring how the digestive system works.*

NYC Standards Connections:

Health:
NPA 1.1, 1.2, 1.3, 1.4, 1.5 NPA 1.9

Science:
HS-LS1-2, HS-LS1-6, HS-PS1-2, HS-PS3-3

Recommended Texts:

Gulp by Mary Roach

Where to Teach: Health - HS, Science - Biology, Chemistry

NYC CORE CURRICULUM CONNECTIONS:

New Visions Biology, Marathon Runner, Muscles & Energy 5E Students gather data on the impact of exercise on CO_2 production, pulse rate, and breathing rate in order to surface how feedback mechanisms across multiple body systems maintain homeostasis during exercise. Students use their data to develop an input-output model of cellular respiration in muscle cells, emphasizing how energy is released from breaking bonds in matter.

NYS Mandated Biology Lab Balancing Act - Graph analysis of blood glucose level and role of insulin after eating breakfast in Student Packet 1

NYS Mandated Biology Lab Unraveling Mystery of Lactose Intolerance - Lab activity where students (1)observe the effect of lactase on the digestion of lactose (milk sugar) in order to explore an anchoring phenomenon (2)revise a model that shows how the reaction and its products support the essential functions of life

Chemistry (Chemical Reactions, Energy, Enzymes units) / Regents Chemistry review units on energy and reaction rates

- Students examine how digestion involves chemical reactions (enzyme activity, pH changes, and molecular breakdown of nutrients).
- Analyze how eating pace affects enzyme efficiency and nutrient absorption.
- Explore the role of macromolecules (carbohydrates, proteins, fats) and how mindful eating supports proper chemical digestion.
- Connect mindful eating behaviors to energy release (ATP production) and metabolic pathways.
- Evaluate how overeating or rapid eating can disrupt chemical balance (blood glucose spikes, insulin response).

Food & Health 2

Understand the importance of hydration

K-2

Explain how drinking water helps our bodies to work well, and how we lose water that needs to be replaced (through breathing, sweating, urinating/defecating).

3-5

Describe the importance of water for hydration and its role in maintaining overall health and supporting bodily functions; identify some effects of dehydration.

6-8

Explain the effects of hydration and dehydration on mental and physical performance, and choices that can promote healthy hydration, including consuming water, and fruits and vegetables (because they contain water).

9-12

Explain, from a scientific perspective, how hydration impacts bodily function and development. Explain the role of electrolytes in hydration, such as magnesium and potassium, and what food sources provide them.

EQUITY SPOTLIGHT:

- ☀ Focus on learning about how water and food choices (such as fruits and vegetables) support hydration.
- ☀ Help students identify locations of water fountains and times they may be able to access water fountains during the school day.

Food & Health 2

Understand the importance of hydration.

K-2

Explain how drinking water helps our bodies to work well, and how we lose water that needs to be replaced (through breathing, sweating, urinating/defecating).

What this looks like: *Learn about how water works with our bodies through reading books and health lessons Conduct a simple demo to show students how their bodies lose water, by having them breathe into their hands and see what happens (hands become wet from water lost while breathing!)*

NYC Standards Connections:

Health:
NPA 1.7, 1.8

Recommended Texts:

Hey, Water by Antoinette Portis
Why Do We Need Water? By Karen Latchana Kenney

Where to Teach: Health Grades K & 1

NYC CORE CURRICULUM CONNECTIONS:

HealthSmart, Grade K, Lesson 23, " Setting a Goal to Drink Plenty of Water" Students discuss why drinking water is important, color a picture of children drinking water, and tape it to their desk as a reminder and a place to tally their water intake.

HealthSmart, Grade 1, Lesson 22, "We Drink Plenty of Water" Students discuss the importance of drinking plenty of water, especially after physical activity, and color a "Water Buddy" badge to wear and remind their friends to drink water

HealthSmart, Grade 1, Lesson 23, "Setting a Goal to Eat Breakfast or Drink More Water" Students discuss the barriers to eating healthy breakfasts and drinking water and then select one to do as a goal.

HealthSmart, Grade 2, Lesson 16, "Drinking Water to Be Healthy" Students learn about why water is the best choice for hydration, what it does for the body, and why other choices, like soda, are not good for health

Food & Health 2

Understand the importance of hydration.

3-5 Describe the importance of water for hydration and its role in maintaining overall health and supporting bodily functions; identify some effects of dehydration.

What this looks like: *Health lessons on the importance of water for our bodies through*

NYC Standards Connections:

Health:
NPA 1.1

Recommended Texts:

One Well by Rochelle Strauss
Every Last Drop by Michelle Mulder

Where to Teach: Health Grade 3

NYC CORE CURRICULUM CONNECTIONS:

HealthSmart, Grade 3, Lesson 18, "Water and other Healthy Drink Choices" engages students in reading about the benefits of drinking water and then discussing why sugary drinks are a less healthy choice.

Food & Health 2

Understand the importance of hydration.

6-8

Explain the effects of hydration and dehydration on mental and physical performance, and choices that can promote healthy hydration, including consuming water, and fruits and vegetables (because they contain water).

What this looks like: *Health lessons and discussions inviting students to share how they feel when they haven't had enough water, and ways that they can be well-hydrated.*

NYC Standards Connections:

Health:
NTR 1.5

Recommended Texts:

Poisoned Water by Candy C. Cooper and Marc Aronson

Where to Teach: MS Health

Food & Health 2

Understand the importance of hydration

9-12

Explain, from a scientific perspective, how hydration impacts bodily function and development.

Explain the role of electrolytes in hydration, such as magnesium and potassium, and what food sources provide them.

What this looks like: *Science investigation on how hydration impacts physiological functioning*

NYC Standards Connections:

Health:
NPA 1.6

Science:
HS-LS1-2, HS-LS1-3

Recommended Texts:

Where to Teach: Health Grades K & 1

NYC CORE CURRICULUM CONNECTIONS:

New Visions Biology, Marathon Runner Water Balance 5E Students begin by discussing why a marathon runner becomes sweaty and dehydrated. They debate whether water or sports drinks are more effective for rehydration during intense exercise. To explore how the body maintains fluid balance (osmoregulation), students complete two investigations: 1) Cellular Level: They observe osmosis firsthand using onion cells. 2) Organ Level: They analyze data regarding kidney function during osmoregulation. Following these activities, students apply their knowledge of feedback loops to construct a flowchart. This diagram maps out exactly how the body regulates water levels during physical exertion. Next, the lesson shifts to an ecological scenario. Students predict what happens when a freshwater fish is placed in saltwater. They establish specific criteria to design a model that illustrates whether the fish can adapt and survive this environmental shift. To conclude, students return to the initial marathon runner scenario. They use their new understanding of human osmoregulation to analyze how plasma sodium levels impact an athlete's physical stability.

Food & Health 3

Choose minimally- and less-processed foods more often by gaining the experience and skills to identify what is in the foods available to you.

K-2

Identify fruits you eat that you can picture how they grow (i.e. an apple grows on trees). Identify where specific foods come from, including fruits (i.e. apples) growing on fruit trees, carrots & potatoes growing underground, tomatoes growing on plants.

3-5

Identify foods you eat and that you can picture how they grow and foods you eat that you cannot picture how it grows (i.e. a cheesy chip).

6-8

Trace ingredients back to their source, by identifying the first three ingredients listed in a food item's ingredients list and identifying how they are grown.

9-12

Recognize the benefits of eating whole foods and whole ingredients, and the effects of processing on food. Explore the processing of food ingredients and how ingredients that you cannot picture how they grow are made.

EQUITY SPOTLIGHT:

- ☀ Rather than vilifying foods that are highly processed, focus on having students learn the benefits of whole foods and ingredients closest to how they grow in nature - and students can come to the conclusion of the health benefits through these lessons, rather than by feeling guilty for eating their favorite snacks.

Food & Health 3

Make choices based on your ability to identify what is in the foods you're eating, recognizing that the most nutritious foods are closest to how they look in nature.

K-2

Identify fruits you eat that you can picture how they grow (i.e. an apple grows on trees). Identify where specific foods come from, including fruits (i.e. apples) growing on fruit trees, carrots & potatoes growing underground, tomatoes growing on plants.

What this looks like: *When possible, partner with your school cafeteria team to bring students on a tour of the school cafeteria. When possible, engage students in tasting different foods and identifying where/how they grow (such as apples, carrots, and potatoes).*

NYC Standards Connections:

Health:
NPA 1.1, 1.2, 1.3, 1.4

Recommended Texts:

The Vegetables We Eat by Gail Gibbons
The Fruits We Eat by Gail Gibbons
Our Food Grows by Sarah M. White

Where to Teach: Health Grade 2

NYC CORE CURRICULUM CONNECTIONS:

HealthSmart, Grade 2, Lesson 16, "Drinking Water to Be Healthy" Students learn about why water is the best choice for hydration, what it does for the body, and why other choices, like soda, are not good for health

HealthSmart, Grade 2, Lesson 18, "Fruits and Vegetables are Healthy Snacks" Students identify fruits and vegetables they like, and then discuss why these are better snacks than other choices like chips.

RIGHT: Students learn about a rainbow of fruits and vegetables

Food & Health 3

Make choices based on your ability to identify what is in the foods you're eating, recognizing that the most nutritious foods are closest to how they look in nature.

3-5 Identify foods you eat and that you can picture how they grow and foods you eat that you cannot picture how it grows (i.e. a cheesy chip)

What this looks like:

Have students identify foods they can picture growing (i.e. an apple) and foods they cannot picture growing (i.e. a pop tart). When possible, partner with the school cafeteria to bring students on a tour or visit to the cafeteria. If possible, have students taste/explore various foods and discuss where they come from, such as carrots, tomatoes, beans, lentils. Have students draw pictures of foods as they grow and foods on the plate.

NYC Standards Connections:

Health:
NPA 1.6

Recommended Texts:

How to Grow Potato Chips by Alix Wood
How to Grow Tomato Ketchup by Alix Wood
How to Grow Strawberry Jam by Alix Wood
From Vine to Pizza by Penelope S. Nelson
From Garden to Pickle by Penelope S. Nelson

Where to Teach: Health Grade 3

NYC CORE CURRICULUM CONNECTIONS:

HealthSmart, Grade 3, Lesson 18, "Water and other Healthy Drink Choices" Students read about the benefits of drinking water and then discuss why sugary drinks are a less healthy choice.

Food & Health 3

Make choices based on your ability to identify what is in the foods you're eating, recognizing that the most nutritious foods are closest to how they look in nature.

6-8

Trace ingredients back to their source, by identifying the first three ingredients listed in a food item's ingredients list and identifying how they are grown.

What this looks like:

Look at food labels for the first three ingredients listed (ingredients are listed in order of quantity included in the product) and try to identify how they grow. When possible, taste/explore breakfast highlights on a school cafeteria tour, and identify the top 1-3 ingredients inside each and where they come from: Yogurt, Egg dish, Waffle/pancake, Granola packet, Fruit, Cereal.

NYC Standards Connections:

Health:
NTR 1.4

Recommended Texts:

The Story of More by Hope Jahren

Where to Teach: MS Health

NYC CORE CURRICULUM CONNECTIONS:

HealthSmart, MS, Lesson 3, "Assessing My Eating Habits" Students recall their dinner and then consider how they could eat healthier before going through guidelines on the importance of fruits and vegetables, whole grains, low-fat dairy, and limiting fat, salt, and sugar.

Food & Health 3

Make choices based on your ability to identify what is in the foods you're eating, recognizing that the most nutritious foods are closest to how they look in nature.

9-12

Recognize the benefits of eating whole foods and whole ingredients, and the effects of processing on food. Explore the processing of food ingredients and how ingredients that you cannot picture how they grow are made.

What this looks like:

Look at food labels to find the first 3-5 ingredients listed. Try to identify where those ingredients come from. If not identifiable, research how these ingredients are made. When possible, taste/explore the salad bar in the school cafeteria and have conversation with school food staff to learn about ingredients used in school foods (which are often less processed!).

NYC Standards Connections:

Health:
NPA 1.1

Recommended Texts:

Avocado Anxiety by Louise Jacobs
Ultra-Processed People by Chris van Tulleken
In Defense of Food by Michael Pollan
The Botany of Desire by Michael Pollan
Food Rules by Michael Pollan

Where to Teach: HS Health

Food & Health 4

When you eat a food that comes in a package, read the list of ingredients first to understand what it is made from, and know how to read a nutrition label to understand more.

K-2	**Explore different foods and what they are made from - “how do you make a _____?”/”What is in ____?”**
3-5	**Locate the first (3 or 5) ingredients lists on a package and identify the sources of ingredients, including those grown on farms, those sourced in nature, and those processed/ made in industrial settings**
6-8	**Read nutrition labels to understand how much added sugar, sodium, protein, and listed vitamins are in a serving of a series of snacks, and make recommendations for snacks that have the most benefits for your body. Make a food label for a favorite whole fruit or vegetable.**
9-12	**Understand what a nutrition label is, how nutrition labels are regulated, and what products do and do not have them. Explain the meaning of the components of nutrition labels, and evaluate choices of foods for individual needs based on this information. Identify what components are not listed on a food label, such as many vitamins and minerals and thousands of phytonutrients that are beneficial for our bodies.**

EQUITY SPOTLIGHT:

- ☀ Give students tools to understand nutrition labels with a focus on highlighting foods/snacks that have the most benefits for your body, rather than vilifying or labeling snacks as “bad”

Food & Health 4

When you eat a food that comes in a package, read the list of ingredients first to understand what it is made from, and know how to read a nutrition label to understand more.

K-2

Explore different foods and what they are made from - "how do you make a _____?"/"What is in ____?"

What this looks like: *Read texts about how different foods are made and how different ingredients come together to make other foods.*

Recommended Texts:

In Our Garden by Pat Zietlow Miller
The Fruits we Eat by Gail Gibbons
The Vegetables we Eat by Gail Gibbonsl
Our Little Kitchen by Jillian Tamaki
PB & J Hooray! by Janet Nolan
Who Put the Cookies in the Cookie Jar? by George Shannon

NYC Standards Connections:

Health:
NPA 1.2, 1.3, 1.4, 1.5,

Where to Teach: HealthSmart K, 2

NYC CORE CURRICULUM CONNECTIONS:

HealthSmart, Kindergarten, Lesson 22 "You can Choose to Eat Healthy Foods" Students identify foods that are healthy choices and select foods they like to eat from a worksheet of pictures to glue onto a plate, showing the foods they like to eat.

HealthSmart, Grade 2, Lesson 18, "Fruits and Vegetables are Healthy Snacks" Students identify fruits and vegetables they like, and then discuss why these are better snacks than other choices like chips.

HealthSmart, Grade 2, Lesson 19, "Setting a Goal to Eat 5 A Day" Students set a goal to eat 5 fruits/vegetables a day and make a sheet to keep track of their goal

HealthSmart, Grade 2, Lesson 17, "Eating a Healthy Breakfast" Students identify different breakfast foods and discuss which ones are healthy choices and which are not.

Food & Health 4

When you eat a food that comes in a package, read the list of ingredients first to understand what it is made from, and know how to read a nutrition label to understand more.

3-5

Locate the first (3 or 5) ingredients lists on a package and identify the sources of ingredients, including those grown on farms, those sourced in nature, and those processed / made in industrial settings

What this looks like: *Choose a popular processed food product, like Oreo cookies or Poptarts. Have students guess the 5 main ingredients. Then look at the first 5 ingredients and have students compare their lists. Where do the 5 main ingredients actually come from?*

NYC Standards Connections:

Health:
NPA 1.1 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8

Recommended Texts:

Plants Feed Me by Lizzy Rockwell

Where to Teach: HealthSmart 4, 5

NYC CORE CURRICULUM CONNECTIONS:

HealthSmart, Grade 4, Lesson 16, "Eating Healthy: The Big Picture View" Students learn about what foods are in each of the MyPlate food groups and identify favorite foods in each group.

HealthSmart, Grade 4, Lesson 17, "Foods Help Your Body in Different Ways" Students identify how different food groups help your body and plan to discuss healthy snacks at home.

HealthSmart, Grade 4, Lesson 19, "My Daily Eating and Activity Goal" Students set a goal for physical activity and eating, and then log their food, water, and activity to track their achievement toward the goal.

HealthSmart, Grade 5, Lesson 16, "Using the HealthSmart Guidelines for Healthy Eating" Students learn about a series of HealthSmart guidelines (similar to MyPlate) and then connect them to MyPlate and portion sizes.

HealthSmart, Grade 5, Lesson 22, "Healthy Eating & Activity: Setting a Goal" Students make a healthy eating and physical activity goal and track their progress and then track their progress in HealthSmart L23 "Tracking my Progress."

Food & Health 4

When you eat a food that comes in a package, read the list of ingredients first to understand what it is made from, and know how to read a nutrition label to understand more.

6-8

Read nutrition labels to understand how much added sugar, sodium, protein, and listed vitamins are in a serving of a series of snacks, and make recommendations for snacks that have the most benefits for your body. Make a food label for a favorite whole fruit or vegetable.

What this looks like:

Have students bring in empty packaging of snacks that they enjoy. Research how to read a food label, including the recommended amounts of sugar and sodium, and the benefits of listed vitamins. Have students use the information they found to make recommendations for snacks that have the most benefits for the body. Have students research their favorite fruit or vegetable and make a food label for that whole food.

NYC Standards Connections:

Health:
NTR 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 3.1, 7.2

Recommended Texts:

Diet for a Changing Climate by Sue Heaverich and Christy Mihaly

Where to Teach: HealthSmart MS

NYC CORE CURRICULUM CONNECTIONS:

HealthSmart, MS, Lesson 3, "Assessing My Eating Habits" Students recall their dinner and then consider how they could eat healthier before going through guidelines on the importance of fruits and vegetables, whole grains, low-fat dairy, and limiting fat, salt, and sugar.

HealthSmart, MS, Lesson 4, "Reading a Food Label" Students analyze examples of food labels, get an overview of food label components (i.e. calories), and then complete a worksheet about food labels to understand their parts.

HealthSmart, MS, Lesson 16, "My Healthy Eating and Physical Activity Goal" Students set a goal around healthy eating or physical activity and track it in L17 “Tracking my Progress”

Food & Health 4

When you eat a food that comes in a package, read the list of ingredients first to understand what it is made from, and know how to read a nutrition label to understand more.

9-12

Understand what a nutrition label is, how nutrition labels are regulated, and what products do and do not have them. Explain the meaning of the components of nutrition labels, and evaluate choices of foods for individual needs based on this information. Identify what components are not listed on a food label, such as many vitamins and minerals and thousands of phytonutrients that are beneficial for our bodies.

What this looks like: *Research the different parts of a nutrition label to learn about what components of different foods do for our bodies, and then creating a lesson for younger students or a picture book to teach others about the ways that various foods help our bodies.*

NYC Standards Connections:

Health:
NPA 1.3, 1.4, 1.5, 3.1, 7.1

Recommended Texts:

Fast Food Nation by Eric Schlosser

Where to Teach: HealthSmart HS

NYC CORE CURRICULUM CONNECTIONS:

HealthSmart, HS, Lesson 2, "Guidelines for Healthy Eating" gives students an overview of the Dietary Guidelines for Americans

HealthSmart, HS, Lesson 3, "What's on My Plate" gives an overview of MyPlate, including components of MyPlate and portion size

HealthSmart, HS, Lesson 4, "Reading Food Labels" Students learn about different components of food labels and then practice analyzing food labels

HealthSmart, HS, Lesson 10, "My Healthy Eating and Physical Activity Goal" Students learn how to write a SMART goal around healthy eating or physical activity. They track progress in L11 "Tracking my Progress"

Contributors

OFNS LEADERSHIP TEAM

Jeremy Walter
Executive Director of Food and Nutrition Education,
NYC Public Schools Office of Food and Nutrition Services

Yanick Roman
Director of Food and Nutrition Education,
NYC Public Schools Office of Food and Nutrition Services

Eshonda Carraway-Evans
Community Coordinator,
NYC Public Schools Office of Food and Nutrition Services

PROJECT LEAD

Meredith Hill-Patel
Educational Consultant, RootEd Educational Consulting

NUTRITION CONTRIBUTORS

Pamela Koch, EdD, RDN
Mary Swartz Rose Associate Professor of
Nutrition and Education
Faculty Director, Laurie M. Tisch Center
for Food, Education & Policy

Peishien Chiou, MS, RDN
Food & Nutrition Educator, Chef, Consultant

Jenn Mampara, MS
former Director of Education,
FoodPrints Program, FRESHFARM

NYC PUBLIC SCHOOLS CENTRAL HEALTH TEAM

Sarah Cocuzzo
Director of Health Education,
NYC Public Schools Office of School Wellness Programs

Tanya Bacchus
Elementary School Health Education Instructional Specialist,
NYC Public Schools Office of School Wellness Programs

Amy Dawson
Middle School Health Education Instructional Specialist,
NYC Public Schools Office of School Wellness Programs

Dr. Elizabeth Farrell
High School Health Education Instructional Specialist,
NYC Public Schools Office of School Wellness Programs

TEACHER & CONTENT SPECIALIST CONTRIBUTORS

Erin A. Bauer
School Wellness Specialist,
NYC DOE Office of School Wellness Programs

Daniel Attridge
HS English Teacher,
Columbia Secondary School for Math, Science, &
Engineering, Manhattan

Tatiana Eder
HS Agriculture Science Teacher,
John Bowne High School, Queens

Christina Farago
Special Education Teacher,
Mott Hall Community School, Bronx

Tara Glover
MS Biology/Urban Ecology Teacher,
IS 584, Bronx

Melissa Jacobs
Director of Library Services,
NYC Public Schools Office of Library Services

Fatima Ishtar
MS/HS Biology Teacher,
IS 238 Susan B. Anthony School, Queens

Jesse Mechanick
District Science Point
NYC Public Schools Community School District 9, Bronx

Rajeshwari Menon
MS Science Teacher,
Battery Park City School, Manhattan

Jenna Ryall
Director, Civics for All,
NYC Public Schools Office of Curriculum & Instruction

Jeanne Salchli
K-5 Science Teacher,
PS 343, Brooklyn

Vandana Vyas
HS Chemistry Teacher,
MS 302, Queens

WITH GRATITUDE
This project was inspired and deeply influenced by the **Pilot Light Food Education Standards,** a project of Pilot Light, a food education program based in Chicago, IL, with work in schools across the country, including NYC.

Project Reviewers & Contributors

This project was developed through a collaborative review process and was shaped by the feedback from a number of individuals along the way, including:

Ali Abate, nonprofit leader & consultant

Zainab Abdul-Rahman, Special Education teacher, JHS189Q

Milkee Anazco, Counselor, Children's Aid Society

Darel Anderson, Director of Partnerships, Harlem Grown

Ben Averbuch, The Student Kitchen

James Barbato, Co-Founder, Bar Cap

Joel Barohn, Youth Nutrition Specialist, American Dairy Association North East

Journei Bimwala, Health Educator, Parks BRXA & school

Iris Boling, Science & Gardening Teacher, MS 53

Nicole Bonica, Menu Coordinator, NYC DOE Office of Food & Nutrition Services

Maria Castellanos, Nutrition Coordinator, Familia Life Academy Charter School

Jen Cinclair, Program Manager, Spoons Across America

Rich Cumming, Founder & CEO FoodStream Network

Lisa Davis, Director, NYC DOE Office of Food & Nutrition Services

Alexandra DeSorbo-Quinn, EdD MPH, Executive Director, Pilot Light

Jessie Donaldson, Nutrition & Health Services Coordinator, Food Bank for NYC

Katrina Duncan, Teacher, PS 135Q

Carla Escalante, Linguist, Community Member

Jessica Feldman, Senior Program Manager, Common Threads

Peter Forte, Shared Learning Specialist, NYC DOE Office of Food & Nutrition Services

Grace Frutos, Bilingual Speech Therapist, Washington Heights Expeditionary Learning School MS 348

Alison Garbarini, Research Associate, Laurie M. Tisch Center for Food, Education & Policy

Britney Garcia, Shared Learning Specialist, NYC DOE Office of Food & Nutrition Services

Hillary Getty, Director, Nutrition & Culinary Education, City Harvest

Zari Ginsberg, Dietitian and plant-based chef, A to Z Nutrition (nutrition consultant)

Emily Gloven, Shared Learning Specialist, NYC DOE Office of Food & Nutrition Services

Edwin Goicochea, Chief Operating Officer, Kommissary

Megan Gottlieb, Program Specialist, Pilot Light

Natalie Greaves-Peters, PhD, RDN, Adjunct Assistant Professor, NYU / Evaluator LEAF Program, Stone Barns Center

Emily Holder, Physical Education, Dance, and Health teacher / Health Coach, Frank McCourt High School

Rebecca Johnson, Chef & Partnerships Manager, Plant Powered Metro NY

Johanna Josaphat, Teacher Leader, The Urban Assembly Unison School

Ari Kazansky, Garden & Environmental Program Manager, Riverdale Neighborhood House

Sara Kempton, Program Director for Environmental and Garden Education, Van Cortlandt Park Alliance

Siobhan Keys, Admin Coordinator, The Charlie Cart Project

Project Reviewers & Contributors

(Continued From Previous)

Paula Lucas, Administrative Support, Community Liaison, 811X The Academy for Career and Living Skills, D75

Hannah Luna, Graduate Student, Teachers College, Columbia University

Christine McGuire, Registered Dietitian, National Enrichment Group

Eileen McManus, Teacher, PS MS 278

Theresa Mendez, Teacher, The Young Women's Leadership School of Queens

Taylor Meredith, Education Policy Advisor, Pilot Light

Vama Naik, Graduate Student, Teachers College, Columbia University

Amara Ndudikwa, Doctoral Student in Health Education, Teachers College

Nosheen Patoli, Teacher, PS102Q

Jonathan Pellerin, Teacher, 10X396

Lorna Power, Director Food and Nutrition Capacity Building, Health Department

Moshab Rahman, Environmental Educator, Community Member

Rose Rana, Reviewer, Teachers College, Columbia University

Carlene Rhoden, Teacher, Department of Education

Lisa Rigogliosi, Science Teacher, East Bronx Academy for the Future

Irma Rucker, Teacher, WHEELS, MS 348

Aifra Ruiz, Founder, Healthy con Plantas LLC

Paola Sanchez, NYC DOE Office of School Wellness Programs

Jill Santopietro, Founder, Children’s Food Lab

Justine Shishkoff, Special Education Teacher, PS 135Q The Bellaire Magnet School of Exploration through the Arts

Elizabeth Solomon, Executive Director, Nutrition Policies and Programs, NYC Dept of Health and Mental Hygiene

Shirley Song, Graduate student and Intern, Teachers College/ NYC DOE Office of Food & Nutrition Services

Vanessa Sossa Sanchez, Culinary Educator, Alegria Vegana LLC

Jarrett Spector, Health Education Teacher, PS24 Andrew Jackson Elementary

Raynika Trent, Project Manager, Teachers College

Tiffanie Washington, Shared Learning Specialist, OFNS

Abbie Watts, Director of School Food Advocacy, Community Food Advocates

References: Standards Reviewed

Center for Ecoliteracy. (2014). *Big ideas: A new alignment with academic standards*. https://www.ecoliteracy.org/download/big-ideas-new-alignment-academic-standards

Massachusetts Department of Elementary and Secondary Education. (2023). *Massachusetts curriculum framework for comprehensive health and physical education: Public comment draft*. https://www.doe.mass.edu/frameworks/health/2023-07-health-draft.pdf

National Consensus for School Health Education. (2024). *National health education standards: Model guidance for curriculum and instruction* (3rd ed.). https://www.schoolhealtheducation.org/wp-content/uploads/2024/02/National_Health_Education_Standards_Guide-02.21.2024.pdf

New York City Department of Education. (n.d.). *New York City grades 6–8 health education scope and sequence*. WeTeachNYC. *https://www.weteachnyc.org/media2016/filer_public/5e/9f/5e9fe167-9786-4409-8f90-ecad3cc6be83/grades_6-8_health_education_scope__sequence.pdf*

New York City Department of Education. (n.d.). *New York City grades 9–12 health education scope and sequence*. WeTeachNYC. *https://www.weteachnyc.org/media2016/filer_public/41/9d/419dfdf5-4963-4d01-9cd1-7a14d97af2b0/grades_9-12_health_education_scope__sequence.pdf*

New York City Department of Education. (n.d.). *New York City K–5 health education scope & sequence*. WeTeachNYC. https://www.weteachnyc.org/media2016/filer_public/34/75/34754247-7fef-43a0-85f8-2aebeb245cc9/grades_k-5_health_education_scope__sequence.pdf .

New York City Department of Education. (n.d.). *Suggested pacing guide for elementary school health education*. WeTeachNYC. https://www.weteachnyc.org/resources/resource/suggested-pacing-guide-for-elementary-school-health-education/

New York City Department of Education. (n.d.). *Suggested pacing guide for middle school comprehensive health education*. WeTeachNYC. https://www.weteachnyc.org/resources/resource/suggested-pacing-guide-for-middle-school-comprehensive-health-education/

New York State Education Departmen, Middle Level Career and Technical Education (2023). *Family and Consumer Sciences: Food Systems and Production* https://www.nysed.gov/sites/default/files/programs/career-technical-education/06-food-systems-and-production.pdf

Oregon Department of Education. (2016). *2016 Oregon health education standards*. https://www.oregon.gov/ode/educator-resources/standards/health/Documents/2016ORHEStandards.pdf

Pilot Light. (2025). *Food education standards.* https://pilotlightchefs.org/the-food-education-standards-2/

SHAPE America – Society of Health and Physical Educators. (2024). *New national health education standards*. https://www.shapeamerica.org/standards/health/new-he-standards.aspx

UC Davis Center for Nutrition in Schools. (n.d.). *Nutrition education competencies*. https://cns.ucdavis.edu/sites/g/files/dgvnsk416/files/inline-files/nutredcomp.pdf

References: NYC Standards

New York City Department of Education. (2020). *New York City 9-12 science scope and sequence* (Ed. 2020). WeTeachNYC.

New York City Department of Education. (2022). *New York City Pk-8 science scope and sequence 2022.* WeTeachNYC.

New York City Department of Education. (n.d.). *New York City grades 6–8 health education scope & sequence*. WeTeachNYC.

New York City Department of Education. (n.d.). *New York City grades 9–12 health education scope & sequence.* WeTeachNYC.

New York City Department of Education. (n.d.). *New York City grades K–5 health education scope & sequence*. WeTeachNYC.

New York City Public Schools. (n.d.). *Social studies scope and sequence: Grades 9–12*. WeTeachNYC.

New York City Public Schools. (n.d.). *Social studies scope and sequence: Grades K–8*. WeTeachNYC.

New York State Education Department. (2017a). *New York State next generation English language arts learning standards*.

New York State Education Department. (2017b). *New York State next generation mathematics learning standards*.

Food & Identity Standards Connections

F&I 1: K-2

Identify unique and shared ways that people eat and prepare foods based on culture, likes, dietary needs, and what food is available where they live.

Language Arts
R9, RF4, W4, SL1, SL4

KR9: Make connections between self, text, and the world. (RI&RL)
KRF4: Will engage with emergent level texts and read-alouds to demonstrate comprehension.
KW4: Create a response to a text, author, or personal experience (e.g., dramatization, artwork, or poem).
KSL1: Participate in collaborative conversations with diverse peers and adults in small and large groups and during play.
KSL4: Describe familiar people, places, things, and events with detail.

1R9: Make connections between self and text (texts and other people/ world). (RI&RL)
1RF4: Read beginning reader texts, appropriate to individual student ability, with sufficient accuracy and fluency to support comprehension.
1W4: Create a response to a text, author, theme or personal experience (e.g., poem, dramatization, artwork, or other)
1SL1: Participate in collaborative conversations with diverse peers and adults (e.g., in small and large groups and during play).
1SL4: Describe familiar people, places, things, and events with relevant details expressing ideas clearly.

2R9: Make connections between self and text (texts and other people/ world). (RI&RL)
2RF4: Read grade-level text with sufficient accuracy and fluency to support comprehension.
2RF4a: Read grade-level text orally with accuracy, appropriate rate, and expression
2W4: Create a response to a text, author, theme or personal experience (e.g., poem, play, story, artwork, or other).
2SL1: Participate in collaborative conversations with diverse peers and adults in small and large groups and during play.
2SL4: Describe people, places, things, and events with relevant details, expressing ideas and feelings clearly.

Social Studies
K.1, K.2, 1.1, 1.8

K.1 Children's sense of self is shaped by experiences that are unique to them and their families, and by common experiences shared by a community or nation.
K.2 Children, families, and communities exhibit cultural similarities and differences.

1.1 Language, beliefs, customs, and traditions help shape the identity and culture of a family and a community. (Standards 1, 4)
1.8 Historical sources reveal information about how life in the past differs from the present. (Standards 1, 2)

F&I 1: 3-5

Describe how peoples' cultures, geographies, and experiences influence their connections to food.

Language Arts
R3, R9, RF4, SL1, W5 (4th & 5th), W7

3R3: In literary texts, describe character traits, motivations, or feelings, drawing on specific details from the text. (RL)
In informational texts, describe the relationship among a series of events, ideas, concepts, or steps in a text, using language that pertains to time, sequence, and cause/effect. (RI)
3R9: Recognize genres and make connections to other texts, ideas, cultural perspectives, eras, personal events, and situations. (RI&RL)
3RF4: Read grade-level text with sufficient accuracy and fluency to support comprehension.
3W7: Recall relevant information from experiences or gather information from multiple sources; take brief notes on sources and sort evidence into provided categories.
3SL1: Participate and engage effectively in a range of collaborative discussions with diverse peers and adults, expressing ideas clearly, and building on those of others.

4R3: In literary texts, describe a character, setting, or event, drawing on specific details in the text. (RL) In informational texts, explain events, procedures, ideas, or concepts, including what happened and why, based on specific evidence from the text. (RI)
4R9: Recognize genres and make connections to other texts, ideas, cultural perspectives, eras, personal events, and situations. (RI&RL)
4RF4: Read grade-level text with sufficient accuracy and fluency to support comprehension.
4W5: Draw evidence from literary or informational texts to respond and support analysis, reflection, and research by applying the grade 4 Reading Standards.
4W7: Recall relevant information from experiences or gather relevant information from multiple sources; take notes and categorize information, and provide a list of sources.
4SL1: Engage effectively in a range of collaborative discussions with diverse partners, expressing ideas clearly, and building on those of others.

5R3: In literary texts, compare and contrast two or more characters, settings, and events, drawing on specific details in the text. In informational texts, explain the relationships or interactions between two or more individuals, events, ideas, or concepts based on specific evidence from the text.
5R9: Use established criteria to categorize texts and make informed judgments about quality; make connections to other texts, ideas, cultural perspectives, eras and personal experiences. (RI&RL)
5RF4: Read grade-level text with sufficient accuracy and fluency to support comprehension.
5W5: Draw evidence from literary or informational texts to respond and support analysis, reflection, and research by applying the Grade 5 Reading Standards.
5W7: Recall relevant information from experiences or gather relevant information from multiple sources; summarize or paraphrase; avoid plagiarism and provide a list of sources.
5SL1: Engage effectively in a range of collaborative discussions with diverse partners; express ideas clearly and persuasively, and build on those of others.

Social Studies Conceptual Understandings (from NYC Scope & Sequence):
3.3, 3.4, 3.5
4.2, 4.3, 4.7

3.3 Geographic factors often influence where people settle and form communities. People adapt to and modify their environment in different ways to meet their needs. (Standard 3)
3.4 Each community or culture has a unique history, including heroic figures, traditions, and holidays. (Standard 2)
3.5 Communities share cultural similarities and differences across the world. (Standard 2)

4.2 NATIVE AMERICAN GROUPS AND THE ENVIRONMENT: Native American groups, chiefly the Iroquois (Haudenosaunee) and Algonquian-speaking groups, inhabited the region that became New York. Native Americans interacted with the environment and developed unique cultures. (Standards 1, 3, 5)
4.3 COLONIAL AND REVOLUTIONARY PERIOD IN NEW YORK: European exploration led to the colonization of the region that became New York State. Beginning in the early 1600s, colonial New York was home to people from many different countries. Colonial New York was important during the Revolutionary Period. (Standards 1, 3, 4)
4.7 IMMIGRATION AND MIGRATION FROM THE EARLY 1800'S TO THE PRESENT: Many people have immigrated and migrated to New York State contributing to its cultural growth and development. (Standards 1, 3, 4, 5)

F&I 1: 6-8

Explain how food can symbolize culture and history in literature and life.

Language Arts
R4, R6, SL1

6R4: Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings. Analyze the impact of specific word choices on meaning, tone, and mood, including words with multiple meanings. (RI&RL)
6R6: In literary texts, identify the point of view and explain how it is developed and conveys meaning. (RL) In informational texts, explain how an author's geographic location or culture affects his or her perspective. (RI)
6SL1: Engage effectively in a range of collaborative discussions with diverse partners; express ideas clearly and persuasively, and build on those of others.

7R4: Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings. Analyze the impact of specific word choices on meaning, tone, and mood, including words with multiple meanings. (RI&RL)
7R6: In literary texts, analyze how an author develops and contrasts the point of view and the perspectives of different characters or narrators. (RL) In informational texts, analyze how the author distinguishes his or her position from that of others. (RI)
7SL1: Engage effectively in a range of collaborative discussions with diverse partners; express ideas clearly and persuasively, and build on those of others.

8R4: Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings. Analyze the impact of specific word choices on meaning, tone, and mood, including words with multiple meanings. (RI&RL)
8R6: In literary texts, analyze how the differences between the point of view, perspectives of the characters, the audience, or reader create effects such as mood and tone. (RL) In informational texts, analyze how the author addresses conflicting evidence or viewpoints. (RI)
8SL1: Engage effectively in a range of collaborative discussions with diverse partners; express ideas clearly and persuasively, and build on those of others.

Social Studies Conceptual Understandings (from NYC Scope & Sequence):
6.5, 7.1, 7.2, 8.2

6.5 COMPARATIVE CLASSICAL CIVILIZATIONS IN THE EASTERN HEMISPHERE (c. 600 BCE – c. 500 CE): As complex societies and civilizations change over time, their political and economic structures evolve. A golden age may be indicated when there is an extended period of time that is peaceful, prosperous, and demonstrates great cultural achievements. (Standards 2, 3, 5)

7.1 NATIVE AMERICANS: The physical environment and natural resources of North America influenced the development of the first human settlements and the culture of Native Americans. Native American societies varied across North America. (Standards 1, 2)
7.2 COLONIAL DEVELOPMENTS: European exploration of the New World resulted in various interactions with Native Americans and in colonization. The American colonies were established for a variety of reasons and developed differently based on economic, social, and geographic factors. Colonial America had a variety of social structures under which not all people were treated equally. (Standards 1, 2, 3, 4)

8.2 A CHANGING SOCIETY: Industrialization and immigration contributed to the urbanization of America. Problems resulting from these changes sparked the Progressive movement and increased calls for reform. (Standards 1, 2, 4)

F&I 1: 9-12

Identify how cuisines from a variety of regions and cultures evolved over time and determine what factors influenced their evolution (i.e. biological evolution, technological advances, geographical and environmental factors, trade, religion, globalization, availability, etc.)

Life Science
LS3-1, LS3-2, LS4-3, LS4-4, LS4-5

HS-LS3-1: Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring.
HS-LS3-2: Make and defend a claim based on evidence that inheritable genetic variations may result from (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and/or (3) mutations caused by environmental factors, and/or (4) genetic engineering.
HS-LS4-3: Apply concepts of statistics and probability to support explanations that organisms with an advantageous heritable trait tend to increase in proportion to organisms lacking this trait.
HS-LS4-4: Construct an explanation based on evidence for how natural selection leads to adaptation of populations.
HS-LS4-5. Evaluate the evidence supporting claims that changes in environmental conditions may result in: (1) increases in the number of individuals of some species, (2) the emergence of new species over time, and (3) the extinction of other species.

Social Studies Conceptual Understandings (from NYC Scope & Sequence):
9.1, 10.9

9.1 DEVELOPMENT OF CIVILIZATION: The development of agriculture enabled the rise of the first civilizations, located primarily along river valleys; these complex societies were influenced by geographic conditions and shared a number of defining political, social, and economic characteristics. (Standards 2, 3, 4)

10.9 GLOBALIZATION AND A CHANGING GLOBAL ENVIRONMENT (1990 – PRESENT): Technological changes have resulted in a more interconnected world affecting economic and political relations in some cases leading to conflict and in others to efforts to cooperate. Globalization and population pressures

have led to strains on the environment. (Standards 2, 3, 4, 5)

Chemistry
PS1-3, PS2-6, PS3-1

HS-PS1-3 | Intermolecular Forces
Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.
HS-PS2-6 | Structure and Function of Materials Communicate scientific and technical information about why the particulate-level structure is important in the functioning of designed materials.

HS-PS3-1 | Energy Transfer
Create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known.

F&I 2: K-2

Explain ways that food might originate (indigenous to an area or introduced to an area)

Language Arts
R9, RF4, W4, SL1, SL4

KR9: Make connections between self, text, and the world. (RI&RL)
KRF4: Will engage with emergent level texts and read-alouds to demonstrate comprehension.
KW4: Create a response to a text, author, or personal experience (e.g., dramatization, artwork, or poem).
KSL1: Participate in collaborative conversations with diverse peers and adults in small and large groups and during play.
KSL4: Describe familiar people, places, things, and events with detail.

1R9: Make connections between self and text (texts and other people/ world). (RI&RL)
1RF4: Read beginning reader texts, appropriate to individual student ability, with sufficient accuracy and fluency to support comprehension.
1W4: Create a response to a text, author, theme or personal experience (e.g., poem, dramatization, artwork, or other)
1SL1: Participate in collaborative conversations with diverse peers and adults (e.g., in small and large groups and during play).
1SL4: Describe familiar people, places, things, and events with relevant details expressing ideas clearly.

2R9: Make connections between self and text (texts and other people/ world). (RI&RL)
2RF4: Read grade-level text with sufficient accuracy and fluency to support comprehension.
2RF4a: Read grade-level text orally with accuracy, appropriate rate, and expression
2W4: Create a response to a text, author, theme or personal experience (e.g., poem, play, story, artwork, or other).
2SL1: Participate in collaborative conversations with diverse peers and adults in small and large groups and during play.
2SL4: Describe people, places, things, and events with relevant details, expressing ideas and feelings
clearly.

Social Studies
2.6, 2.7

2.6 Identifying continuities and changes over time can help understand historical developments. (Standard 1)

2.7 Cause-and-effect relationships help us recount events and understand historical development. (Standard 1)

F&I 2: 3-5

Explain how food access has shaped, and been shaped by, history.

Language Arts
R3, R9, RF4, SL1, W5 (4th & 5th), W7

3R3: In literary texts, describe character traits, motivations, or feelings, drawing on specific details from the text. (RL)
In informational texts, describe the relationship among a series of events, ideas, concepts, or steps in a text, using language that pertains to time, sequence, and cause/effect. (RI)
3R9: Recognize genres and make connections to other texts, ideas, cultural perspectives, eras, personal
events, and situations. (RI&RL)
3RF4: Read grade-level text with sufficient accuracy and fluency to support comprehension.
3W7: Recall relevant information from experiences or gather information from multiple sources; take brief notes on sources and sort evidence into provided categories.
3SL1: Participate and engage effectively in a range of collaborative discussions with diverse peers and
adults, expressing ideas clearly, and building on those of others.

4R3: In literary texts, describe a character, setting, or event, drawing on specific details in the text. (RL)
In informational texts, explain events, procedures, ideas, or concepts, including what happened and why, based on specific evidence from the text. (RI)
4R9: Recognize genres and make connections to other texts, ideas, cultural perspectives, eras, personal

events, and situations. (RI&RL)
4RF4: Read grade-level text with sufficient accuracy and fluency to support comprehension.
4W5: Draw evidence from literary or informational texts to respond and support analysis, reflection, and research by applying the grade 4 Reading Standards.
4W7: Recall relevant information from experiences or gather relevant information from multiple sources; take notes and categorize information, and provide a list of sources.
4SL1: Engage effectively in a range of collaborative discussions with diverse partners, expressing ideas clearly, and building on those of others.

5R3: In literary texts, compare and contrast two or more characters, settings, and events, drawing on specific details in the text. In informational texts, explain the relationships or interactions between two or more individuals, events, ideas, or concepts based on specific evidence from the text.
5R9: Use established criteria to categorize texts and make informed judgments about quality; make connections to other texts, ideas, cultural perspectives, eras and personal experiences. (RI&RL)
5RF4: Read grade-level text with sufficient accuracy and fluency to support comprehension.
5W5: Draw evidence from literary or informational texts to respond and support analysis, reflection, and research by applying the Grade 5 Reading Standards.
5W7: Recall relevant information from experiences or gather relevant information from multiple sources; summarize or paraphrase; avoid plagiarism and provide a list of sources.
5SL1: Engage effectively in a range of collaborative discussions with diverse partners; express ideas clearly and persuasively, and build on those of others.

Social Studies Conceptual Understandings (from NYC Scope & Sequence):
3.3, 3.4, 3.5, 3.6
4.2, 4.3, 4.7
5.3

3.3 Geographic factors often influence where people settle and form communities. People adapt to and modify their environment in different ways to meet their needs. (Standard 3)
3.4 Each community or culture has a unique history, including heroic figures, traditions, and holidays. (Standard 2)
3.5 Communities share cultural similarities and differences across the world. (Standard 2)
3.6 Communities from around the world interact with other people and communities and exchange cultural ideas and practices. (Standard 2)

4.2 NATIVE AMERICAN GROUPS AND THE ENVIRONMENT: Native American groups, chiefly the Iroquois (Haudenosaunee) and Algonquian-speaking groups, inhabited the region that became New York. Native Americans interacted with the environment and developed unique cultures. (Standards 1, 3, 5)

4.3 COLONIAL AND REVOLUTIONARY PERIOD IN NEW YORK: European exploration led to the colonization of the region that became New York State. Beginning in the early 1600s, colonial New York was home to people from many different countries. Colonial New York was important during the Revolutionary Period. (Standards 1, 3, 4)
4.7 IMMIGRATION AND MIGRATION FROM THE EARLY 1800'S TO THE PRESENT: Many people have immigrated and migrated to New York State contributing to its cultural growth and development. (Standards 1, 3, 4, 5)

5.3 EUROPEAN EXPLORATION AND ITS EFFECTS: Various European powers explored and eventually colonized the Western Hemisphere. This had a profound impact on Native Americans and led to the transatlantic slave trade. (Standards 1, 2, 3, 4)

F&I 2: 6-8

Explain how food can influence the growth or oppression of society.

Language Arts
R4, R6, SL1

6R4: Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings. Analyze the impact of specific word choices on meaning, tone, and mood, including words with multiple meanings. (RI&RL)

6R6: In literary texts, identify the point of view and explain how it is developed and conveys meaning. (RL) In informational texts, explain how an author's geographic location or culture affects his or her perspective. (RI)

6SL1: Engage effectively in a range of collaborative discussions with diverse partners; express ideas clearly and persuasively, and build on those of others.

7R4: Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings. Analyze the impact of specific word choices on meaning, tone, and mood, including words with multiple meanings. (RI&RL)

7R6: In literary texts, analyze how an author develops and contrasts the point of view and the perspectives of different characters or narrators. (RL) In informational texts, analyze how the author distinguishes his or her position from that of others. (RI)

7SL1: Engage effectively in a range of collaborative discussions with diverse partners; express ideas clearly and persuasively, and build on those of others.

8R4: Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings. Analyze the impact of specific word choices on meaning, tone, and mood, including words with multiple meanings. (RI&RL)

8R6: In literary texts, analyze how the differences between the point of view, perspectives of the characters, the audience, or reader create effects such as mood and tone. (RL) In informational texts, analyze how the author addresses conflicting evidence or viewpoints. (RI)

8SL1: Engage effectively in a range of collaborative discussions with diverse partners; express ideas clearly and persuasively, and build on those of others.

Social Studies Conceptual Understandings (from NYC Scope & Sequence):
6.5, 6.3, 7.1, 7.2, 7.8, 8.1

6.2 THE FIRST HUMANS THROUGH THE NEOLITHIC REVOLUTION IN THE EASTERN HEMISPHERE: The first humans modified their physical environment as well as adapted to their environment. (Standards 2, 3)

6.3 EARLY RIVER VALLEY CIVILIZATIONS IN THE EASTERN HEMISPHERE (c. 3500 BCE – c. 500 BCE): Complex societies and civilizations developed in the Eastern Hemisphere. Although these complex societies and civilizations have certain defining characteristics in common, each is also known for unique cultural achievements and contributions. Early human communities in the Eastern Hemisphere adapted to and modified the physical environment. (Standards 2, 3)

7.1 NATIVE AMERICANS:
The physical environment and natural resources of North America influenced the development of the first human settlements and the culture of Native Americans. Native American societies varied across North America. (Standards 1, 2)

7.2 COLONIAL
DEVELOPMENTS: European exploration of the New World resulted in various interactions with Native Americans and in colonization. The American colonies were established
for a variety of reasons and developed differently based on economic, social, and geographic factors. Colonial America had a variety of social structures under which not all
people were treated equally. (Standards 1, 2, 3, 4)

7.8 A NATION DIVIDED: Westward expansion, the industrialization of the North, and the increase of slavery in the South contributed to the growth of sectionalism. Constitutional conflicts between advocates of States rights and supporters of federal power increased tensions in the nation; attempts to compromise ultimately failed to keep the nation together, leading to the Civil War. (Standards 1, 3, 4)

8.1 RECONSTRUCTION: Regional tensions following the Civil War complicated efforts to heal the nation and to redefine the status of
African Americans. (Standards 1, 4, 5)

Science
MS-PS1-3, MS-LS1-6, MS-LS4-1, MS-LS4-4, MS-LS4-6

MS-PS1-3. Gather and make sense of information to describe that synthetic materials come from natural resources and impact society.

MS-LS1-6. Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.

MS-LS4-1. Analyze and interpret data for patterns in the fossil record that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth under the assumption that natural laws operate today as in the past.

MS-LS4-4. Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment.

MS-LS4-6. Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time.

F&I 2: 9-12

Compare and contrast different societies' relationships with food and approaches to food production

Social Studies
9.1, 9.8, 9.10

9.1 DEVELOPMENT OF CIVILIZATION: The development of agriculture enabled the rise of the first civilizations, located primarily along river valleys; these complex societies were influenced by geographic conditions and shared a number of defining political, social, and economic characteristics. (Standards 2, 3, 4)

9.8 AFRICA AND THE AMERICAS PRE-1600: The environment, trade networks, and belief systems influenced the development of complex societies and civilizations in Africa and the Americas ca. 1325–1600. (Standards 2, 3, 4, 5)

9.10 INTERACTIONS AND DISRUPTIONS: Efforts to reach the Indies resulted in the encounter between the people of Western Europe, Africa, and the Americas. This encounter led to a devastating impact on populations in the Americas, the rise of the transatlantic slave trade, and the reorientation of trade networks. (Standards 2, 3, 4)

Science Standards:
HS-LS2-1

HS-LS2-1: Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different

scales

F&I 3: K-2

Social Studies
K.4, K.1, K.2, K.3, K.8, K.9, K.11

K.4 Children and adults have rights and responsibilities at home, at school, in the classroom, and in the community. (Standard 5)

K.1 Children's sense of self is shaped by experiences that are unique to them and their families, and by common experiences shared by a community or nation. (Standards 1, 5)

K.2 Children, families, and communities exhibit cultural similarities and differences. (Standards 1, 2)

K.3 Symbols and traditions help develop a shared culture and identity within the United States. (Standard 1)

K.9 People have economic needs and wants. Goods and services can satisfy people's wants. Scarcity is the condition of not being able to have all of the goods and services that a person wants or needs. (Standard 4)

K.8 The past, present and future describe points in time and help us examine and understand events. (Standards 1, 2)

1.1 Language, beliefs, customs, and traditions help shape the identity and culture of a family and a community. (Standards 1, 4)

F&I 3: 3-5

Health
NPA 2.2 Describe internal and external influences that affect food choices and physical activity.

F&I 3: 6-8

Health
NTR 1.6 The value of different nutrition options based on culture, needs, and preferences.

F&I 3: 9-12

Science
HS-LS3-1, HS-LS1-1

HS-LS3-1Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring.

HS-LS1-1Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins which carry out the essential functions of life through systems of specialized cells

Where Food Comes From Standards Connections

WFCF1: K-2

Science
K-LS1-1, K-ESS2-2, K-ESS3-1

K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive.

K-ESS2-2. Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.

K-ESS3-1. Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.

Language Arts
R9, RF4, W4, SL1, SL4

KR9: Make connections between self, text, and the world. (RI&RL)

KRF4: Will engage with emergent level texts and read-alouds to demonstrate comprehension.
KW4: Create a response to a text, author, or personal experience (e.g., dramatization, artwork, or poem).
KSL1: Participate in collaborative conversations with diverse peers and adults in small and large groups and during play.
KSL4: Describe familiar people, places, things, and events with detail.

1R9: Make connections between self and text (texts and other people/ world). (RI&RL)
1RF4: Read beginning reader texts, appropriate to individual student ability, with sufficient accuracy and fluency to support comprehension.
1W4: Create a response to a text, author, theme or personal experience (e.g., poem, dramatization, artwork, or other)
1SL1: Participate in collaborative conversations with diverse peers and adults (e.g., in small and large groups and during play).
1SL4: Describe familiar people, places, things, and events with relevant details expressing ideas clearly.

2R9: Make connections between self and text (texts and other people/ world). (RI&RL)
2RF4: Read grade-level text with sufficient accuracy and fluency to support comprehension.
2RF4a: Read grade-level text orally with accuracy, appropriate rate, and expression
2W4: Create a response to a text, author, theme or personal experience (e.g., poem, play, story, artwork, or other).
2SL1: Participate in collaborative conversations with diverse peers and adults in small and large groups and during play.
2SL4: Describe people, places, things, and events with relevant details, expressing ideas and feelings clearly.

WFCF1: 3-5

Social Studies
3.3, 3.6, 3.9, 4.2, 4.3, 4.6, 4.7, 5.1, 5.4, 5.3

3.3 Geographic factors often influence where people settle and form communities. People adapt to and modify their environment in different ways to meet their needs. (Standard 3)

3.6 Communities from around the world interact with other people and communities and exchange cultural ideas and practices. (Standard 2)

3.9 Communities meet their needs and wants in a variety of ways, forming the basis for their economy. (Standard 4)

4.2 NATIVE AMERICAN GROUPS AND THE ENVIRONMENT: Native American groups, chiefly the Iroquois (Haudenosaunee) and Algonquian-speaking groups, inhabited the region that became New York. Native Americans interacted with the environment and developed unique cultures. (Standards 1, 3, 5)

4.3 COLONIAL AND REVOLUTIONARY PERIOD IN NEW YORK: European exploration led to the colonization of the region that became New York State. Beginning in the early 1600s, colonial New York was home to people from many different countries. Colonial New York was important during the Revolutionary Period. (Standards 1, 3, 4)

4.6 WESTWARD MOVEMENT AND INDUSTRIALIZATION: New York State played an important role in the growth of the United States. During the 1800s, people traveled west looking for opportunities. Economic activities in New York State are varied and have changed over time with improvements in transportation and technology. (Standards 1, 3, 4)

4.7 IMMIGRATION AND MIGRATION FROM THE EARLY 1800S TO THE PRESENT: Many people have immigrated and migrated to New York State contributing to its cultural growth and development. (Standards 1, 3, 4, 5)

5.1 EARLY PEOPLES OF THE AMERICAS: The first humans in the Western Hemisphere modified their physical environment as well as adapted to their environment. Their interactions with their environment led to various
innovations and to the development of unique cultures. (Standards 1, 2, 3)

5.4 GEOGRAPHY IN THE WESTERN HEMISPHERE: The diverse geography of the Western Hemisphere has influenced human culture and settlement in distinct ways. Human communities in the Western Hemisphere have modified the physical environment. (Standard 3)

5.3 EUROPEAN EXPLORATION AND ITS EFFECTS: Various European powers explored and eventually colonized the Western Hemisphere. This had a profound impact on Native Americans and led to the transatlantic
slave trade. (Standards 1, 2, 3, 4)

Language Arts
R3, R9, RF4, SL1, W5 (4th & 5th), W7

3R3: In literary texts, describe character traits, motivations, or feelings, drawing on specific details from the text. (RL)
In informational texts, describe the relationship among a series of events, ideas, concepts, or steps in a text, using language that pertains to time, sequence, and cause/effect. (RI)
3R9: Recognize genres and make connections to other texts, ideas, cultural perspectives, eras, personal events, and situations. (RI&RL)
3RF4: Read grade-level text with sufficient accuracy and fluency to support comprehension.
3W7: Recall relevant information from experiences or gather information from multiple sources; take brief notes on sources and sort evidence into provided categories.
3SL1: Participate and engage effectively in a range of collaborative discussions with diverse peers and adults, expressing ideas clearly, and building on those of others.

4R3: In literary texts, describe a character, setting, or event, drawing on specific details in the text. (RL) In informational texts, explain events, procedures, ideas, or concepts, including what happened and why, based on specific evidence from the text. (RI)
4R9: Recognize genres and make connections to other texts, ideas, cultural perspectives, eras, personal events, and situations. (RI&RL)
4RF4: Read grade-level text with sufficient accuracy and fluency to support comprehension.
4W5: Draw evidence from literary or informational texts to respond and support analysis, reflection, and research by applying the grade 4 Reading Standards.
4W7: Recall relevant information from experiences or gather relevant information from multiple sources; take notes and categorize information, and provide a

list of sources.
4SL1: Engage effectively in a range of collaborative discussions with diverse partners, expressing ideas clearly, and building on those of others.

5R3: In literary texts, compare and contrast two or more characters, settings, and events, drawing on specific details in the text. In informational texts, explain the relationships or interactions between two or more individuals, events, ideas, or concepts based on specific evidence from the text.
5R9: Use established criteria to categorize texts and make informed judgments about quality; make connections to other texts, ideas, cultural perspectives, eras and personal experiences. (RI&RL)
5RF4: Read grade-level text with sufficient accuracy and fluency to support comprehension.
5W5: Draw evidence from literary or informational texts to respond and support analysis, reflection, and research by applying the Grade 5 Reading Standards.
5W7: Recall relevant information from experiences or gather relevant information from multiple sources; summarize or paraphrase; avoid plagiarism and provide a list of sources.
5SL1: Engage effectively in a range of collaborative discussions with diverse partners; express ideas clearly and persuasively, and build on those of others.

WFCF1: 6-8

Science
MS-ESS3-3, MS-LS1-6, MS-LS1-7, MS-LS1-4, MS-LS1-5, MS-LS3-1, MS-LS3-2

MS-ESS3-3. Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.

MS-LS1-6. Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.

MS-LS1-7. Develop a model to describe how food molecules are rearranged through chemical reactions to release energy during cellular respiration and/or form new molecules that support growth as this matter moves through an organism.

MS-LS1-4. Use arguments based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants, respectively .
MS-LS1-5. Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms .
MS-LS3-1. Develop and use a model to explain structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism.
MS-LS3-2. Develop and use a model to describe how asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.

Social Studies
6.5, 7.8, 8.1

6.5 COMPARATIVE CLASSICAL CIVILIZATIONS IN THE EASTERN HEMISPHERE (c. 600 BCE – c. 500 CE): As complex societies and civilizations change over time, their political and economic structures evolve. A golden age may be indicated when there is an extended period of time that is peaceful, prosperous, and demonstrates great cultural achievements. (Standards 2, 3, 5) FOCUS: Case study of Chinese (Qin, Han) and Greco-Roman civilizations (Athens, Sparta, Roman Republic, Roman Empire) 6.5a, 6.5b

7.8 A NATION DIVIDED: Westward expansion, the industrialization of the North, and the increase of slavery in the South contributed to the growth of sectionalism. Constitutional conflicts between advocates of States rights and supporters of federal power increased tensions in the nation; attempts to compromise ultimately failed to keep the nation together, leading to the Civil War. (Standards 1, 3, 4)

8.1 RECONSTRUCTION: Regional tensions
following the Civil War complicated efforts to heal the nation and to redefine the status of African Americans (Standards 1, 4, 5) Reconstruction 8.1b, 8.1c

Language Arts
R1, R8, SL1

6R1: Cite textual evidence to support an analysis of what the text says explicitly/implicitly and make logical inferences. (RI&RL)
6R8: Trace and evaluate the development of an argument and specific claims in texts, distinguishing claims that are supported by reasons and relevant evidence from claims that are not. (RI&RL)
6SL1: Engage effectively in a range of collaborative discussions with diverse partners; express ideas clearly and persuasively, and build on those of others.

7R1: Cite textual evidence to support an analysis of what the text says explicitly/implicitly and make logical inferences. (RI&RL)
7R8: Trace and evaluate the development of an argument and specific claims in a text, assessing whether the reasoning is valid and the evidence is relevant and sufficient and recognizing when irrelevant evidence is introduced. (RI&RL)
7SL1: Engage effectively in a range of collaborative discussions with diverse partners; express ideas clearly and persuasively, and build on those of others.

8R1: Cite textual evidence to strongly support an analysis of what the text says explicitly/implicitly and make logical inferences. (RI&RL)
8R8: Trace and evaluate an argument and specific claims in a text, assessing whether the reasoning is valid and the evidence is relevant and sufficient and recognizing when irrelevant evidence is introduced. (RI&RL)
8SL1: Engage effectively in a range of collaborative discussions with diverse partners; express ideas clearly and persuasively, and build on those of others.

WFCF1: 9-12

Science
HS-LS2-1, HS-LS1-5, HS-LS2-4, HS-LS2-3, HS-LS1-6

HS-LS2-1: Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales

HS-LS1-5: Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.

HS-LS2-4: Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem

HS-LS2-3: Construct and revise an explanation based on evidence for the cycling of matter and flow of energy in aerobic and anaerobic conditions.

HS-LS1-6: Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.

WFCF2: K-2

Language Arts
R9, RF4, W4, SL1, SL4

KR9: Make connections between self, text, and the world. (RI&RL)
KRF4: Will engage with emergent level texts and read-alouds to demonstrate comprehension.
KW4: Create a response to a text, author, or personal experience (e.g., dramatization, artwork, or poem).
KSL1: Participate in collaborative conversations with diverse peers and adults in small and large groups and during play.
KSL4: Describe familiar people, places, things, and events with detail.

1R9: Make connections between self and text (texts and other people/ world). (RI&RL)
1RF4: Read beginning reader texts, appropriate to individual student ability, with sufficient accuracy and fluency to support comprehension.
1W4: Create a response to a text, author, theme or personal experience (e.g., poem, dramatization, artwork, or other)
1SL1: Participate in collaborative conversations with diverse peers and adults (e.g., in small and large groups and during play).
1SL4: Describe familiar people, places, things, and events with relevant details expressing ideas clearly.

2R9: Make connections between self and text (texts and other people/ world). (RI&RL)
2RF4: Read grade-level text with sufficient accuracy and fluency to support comprehension.
2RF4a: Read grade-level text orally with accuracy, appropriate rate, and expression
2W4: Create a response to a text, author, theme or personal experience (e.g., poem, play, story, artwork, or other).
2SL1: Participate in collaborative conversations with diverse peers and adults in small and large groups and during play.
2SL4: Describe people, places, things, and events with relevant details, expressing ideas and feelings clearly.

WFCF2: 3-5

Language Arts
R3, R9, RF4, SL1, W5 (4th & 5th), W7

3R3: In literary texts, describe character traits, motivations, or feelings, drawing on specific details from the text. (RL)
In informational texts, describe the relationship among a series of events, ideas, concepts, or steps in a text, using language that pertains to time, sequence, and cause/effect. (RI)
3R9: Recognize genres and make connections to other texts, ideas, cultural perspectives, eras, personal events, and situations. (RI&RL)
3RF4: Read grade-level text with sufficient accuracy and fluency to support comprehension.
3W7: Recall relevant information from experiences or gather information from multiple sources; take brief notes on sources and sort evidence into provided categories.
3SL1: Participate and engage effectively in a range of collaborative discussions with diverse peers and adults, expressing ideas clearly, and building on those of others.

4R3: In literary texts, describe a character, setting, or event, drawing on specific details in the text. (RL) In informational texts, explain events, procedures, ideas, or concepts, including what happened and why, based on specific evidence from the text. (RI)
4R9: Recognize genres and make connections to other texts, ideas, cultural perspectives, eras, personal events, and situations. (RI&RL)
4RF4: Read grade-level text with sufficient accuracy and fluency to support comprehension.
4W5: Draw evidence from literary or informational texts to respond and support analysis, reflection, and research by applying the grade 4 Reading Standards.
4W7: Recall relevant information from experiences or gather relevant information from multiple sources; take notes and categorize information, and provide a list of sources.
4SL1: Engage effectively in a range of collaborative discussions with diverse partners, expressing ideas clearly, and building on those of others.

5R3: In literary texts, compare and contrast two or more characters, settings, and events, drawing on specific details in the text. In informational texts, explain the relationships or interactions between two or more individuals, events, ideas, or concepts based on specific evidence from the text.
5R9: Use established criteria to categorize texts and make informed judgments about quality; make connections to other texts, ideas, cultural perspectives, eras and personal experiences. (RI&RL)
5RF4: Read grade-level text with sufficient accuracy and fluency to support comprehension.
5W5: Draw evidence from literary or informational texts to respond and support analysis, reflection, and research by applying the Grade 5 Reading Standards.

5W7: Recall relevant information from experiences or gather relevant information from multiple sources; summarize or paraphrase; avoid plagiarism and provide a list of sources.
5SL1: Engage effectively in a range of collaborative discussions with diverse partners; express ideas clearly and persuasively, and build on those of others.

WFCF2: 6-8

Language Arts
R1, R8, SL1

6R1: Cite textual evidence to support an analysis of what the text says explicitly/implicitly and make logical inferences. (RI&RL)
6R8: Trace and evaluate the development of an argument and specific claims in texts, distinguishing claims that are supported by reasons and relevant evidence from claims that are not. (RI&RL)
6SL1: Engage effectively in a range of collaborative discussions with diverse partners; express ideas clearly and persuasively, and build on those of others.

7R1: Cite textual evidence to support an analysis of what the text says explicitly/implicitly and make logical inferences. (RI&RL)
7R8: Trace and evaluate the development of an argument and specific claims in a text, assessing whether the reasoning is valid and the evidence is relevant and sufficient and recognizing when irrelevant evidence is introduced. (RI&RL)
7SL1: Engage effectively in a range of collaborative discussions with diverse partners; express ideas clearly and persuasively, and build on those of others.

8R1: Cite textual evidence to strongly support an analysis of what the text says explicitly/implicitly and make logical inferences. (RI&RL)
8R8: Trace and evaluate an argument and specific claims in a text, assessing whether the reasoning is valid and the evidence is relevant and sufficient and recognizing when irrelevant evidence is introduced. (RI&RL)
8SL1: Engage effectively in a range of collaborative discussions with diverse partners; express ideas clearly and persuasively, and build on those of others.

WFCF2: 9-12

Science
HS-LS2-1, HS-LS1-5, HS-LS2-4, HS-LS2-3, HS-LS1-6

HS-LS2-1. Use mathematical and/or computational representations to support explanations of biotic and abiotic factors that affect carrying capacity of ecosystems at different scales.

HS-LS1-5. Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.

HS-LS2-4, Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem.

HS-LS2-3,Construct and revise an explanation based on evidence for the cycling of matter and flow of energy in ecosystems.

HS-LS1-6. Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements such as nitrogen, sulfur, and phosphorus to form amino acids and other carbon-based molecules

WFCF3: K-2

Literacy
R1, R3, R9, W3, W6, RF4,

KR1: Develop and answer questions about a text. (RI&RL)
KR3: Identify characters, settings, major events in a story, or pieces of information in a text. (RI&RL)
KR9: Make connections between self, text, and the world. (RI&RL)
KW3: Use a combination of drawing, dictating oral expression, and/or emergent writing to narrate an event or events in a sequence.
KW6: Develop questions and participate in shared research and exploration to answer questions and to build and share knowledge.
KRF4: Will engage with emergent level texts and read-alouds to demonstrate comprehension.

1R1: Develop and answer questions about key ideas and details in a text. (RI&RL)
1R3: Describe characters, settings, and major events in a story, or pieces of information in a text. (RI&RL)
1R9: Make connections between self and text (texts and other people/ world). (RI&RL)
1W3: Write narratives which recount real or imagined experiences or events or a short sequence of events.
1W6: Develop questions and participate in shared research and explorations to answer questions and to build knowledge.
1RF4: Read beginning reader texts, appropriate to individual student ability, with sufficient accuracy and fluency to support comprehension.

2R1: Develop and answer questions to demonstrate an understanding of key ideas and details in a text. (RI&RL)
2R3: In informational texts, describe the connections between ideas, concepts, or a series of events. (RI)
2R9: Make connections between self and text (texts and other people/ world). (RI&RL)
2W3: Write narratives which recount real or imagined experiences or a short sequence of events, including details to describe actions, thoughts, and feelings;

use temporal words to signal event order, and provide a sense of closure.
2W6: Develop questions and participate in shared research and explorations to answer questions and to build knowledge.
2RF4: Read grade-level text with sufficient accuracy and fluency to support comprehension.

Social Studies:

K.6 Maps and globes are representations of Earth's surface that are used to locate and better understand places and regions.
(Standards 1, 3, 4, 5) People and Neighborhoods K.6

- People work in neighborhoods and have different jobs and responsibilities (police, store owners, sanitation workers, firefighters)
- People in neighborhoods rely on each other for goods, services, and assistance

1.10 People make economic choices as producers and consumers of goods and services. (Standard 4)
Community Workers 1.10b, 1.10c (Standards 4, 5)

- People in the community have different jobs (teachers, truck drivers, doctors, government leaders, etc.)
- Community workers use tools and resources to provide services in a community
- Community workers are diverse and work with one another

WFCF3: 3-5

Literacy
R1, R3, R8, W6, W7

3R1: Develop and answer questions to locate relevant and specific details in a text to support an answer or inference. (RI&RL)
3R3: In informational texts, describe the relationship among a series of events, ideas, concepts, or steps in a text, using language that pertains to time, sequence, and cause/effect. (RI)
3R8: Explain how claims in a text are supported by relevant reasons and evidence. (RI&RL)
3W6: Conduct research to answer questions, including self-generated questions, and to build knowledge.
3W7: Recall relevant information from experiences or gather information from multiple sources; take brief notes on sources and sort evidence into provided categories.

4R1: Locate and refer to relevant details and evidence when explaining what a text says explicitly/implicitly and make logical inferences. (RI&RL)
4R3: In informational texts, explain events, procedures, ideas, or concepts, including what happened and why, based on specific evidence from the text. (RI)
4R8: Explain how claims in a text are supported by relevant reasons and evidence. (RI&RL)
4W6: Conduct research to answer questions, including self-generated questions, and to build knowledge through investigating multiple aspects of a topic.
4W7: Recall relevant information from experiences or gather relevant information from multiple sources; take notes and categorize information, and provide a list of sources.

5R1: Locate and refer to relevant details and evidence when explaining what a text says explicitly/implicitly and make logical inferences. (RI&RL)
5R3: In informational texts, explain the relationships or interactions between two or more individuals, events, ideas, or concepts based on specific evidence from the text. (RI)
5R8: Explain how claims in a text are supported by relevant reasons and evidence, identifying which reasons and evidence support which claims. (RI&RL)
5W6: Conduct research to answer questions, including self-generated questions, and to build knowledge through investigation of multiple aspects of a topic using multiple sources.
5W7: Recall relevant information from experiences or gather relevant information from multiple sources; summarize or paraphrase; avoid plagiarism and provide a list of sources

Social Studies:
3.6, 3.9, 3.10, 4.2, 4.3

3.6 Communities from around the world interact with other people and communities and exchange cultural ideas and practices. (Standard 2)

3.9 Communities meet their needs and wants in a variety of ways, forming the basis for their economy. (Standard 4)

3.10 Each community develops an economic system that addresses three questions: what will be produced, how it will be produced, and who will get what is produced? (Standard 4)

4.2 NATIVE AMERICAN GROUPS AND THE ENVIRONMENT: Native American groups, chiefly the Iroquois (Haudenosaunee) and Algonquian-speaking groups, inhabited the region
that became New York. Native Americans interacted with the environment and developed unique cultures. (Standards 1, 3, 5)

4.3 COLONIAL AND REVOLUTIONARY PERIOD IN NEW YORK: European exploration led to the colonization of the region that became New York State. Beginning in the early 1600s, colonial New York was home to people from many different countries. Colonial New York was important during the Revolutionary Period. (Standards 1, 3, 4)

WFCF3: 6-8

Literacy
R1, R3, R8, W6, W7

6R1: Cite textual evidence to support an analysis of what the text says explicitly/implicitly and make logical inferences. (RI&RL)
6R3: In informational texts, analyze how individuals, events, and ideas are introduced, relate to each other, and are developed. (RI)
6R8: Trace and evaluate the development of an argument and specific claims in texts, distinguishing claims that are supported by reasons and relevant

evidence from claims that are not. (RI&RL)
6W6: Conduct research to answer questions, including self-generated questions, drawing on multiple sources and refocusing the inquiry when appropriate.
6W7: Gather relevant information from multiple sources; assess the credibility of each source; quote or paraphrase the data and conclusions of others; avoid plagiarism and provide basic bibliographic information for sources.

7R1: Cite textual evidence to support an analysis of what the text says explicitly/implicitly and make logical inferences. (RI&RL)
7R3: In informational texts, analyze how individuals, events, and ideas are introduced, relate to each other, and are developed. (RI)
7R8: Trace and evaluate the development of an argument and specific claims in a text, assessing whether the reasoning is valid and the evidence is relevant and sufficient and recognizing when irrelevant evidence is introduced. (RI&RL)
7W6: Conduct research to answer questions, including self-generated questions, drawing on multiple sources and refocusing the inquiry when appropriate. Generate additional related questions for further research and investigation.
7W7: Gather relevant information from multiple sources; assess the credibility and accuracy of each source; quote or paraphrase the data and conclusions of others; avoid plagiarism and follow a standard format for citation.

8R1: Cite textual evidence to strongly support an analysis of what the text says explicitly/implicitly and make logical inferences. (RI&RL)
8R3: In informational texts, analyze how individuals, events, and ideas are introduced, relate to each other, and are developed. (RI)
8R8: Trace and evaluate an argument and specific claims in a text, assessing whether the reasoning is valid and the evidence is relevant and sufficient and recognizing when irrelevant evidence is introduced. (RI&RL)
8W6: Conduct research to answer questions, including self-generated questions, drawing on multiple sources, refocusing the inquiry when appropriate. Generate additional related questions that allow for multiple avenues of exploration.

8W7: Gather relevant information from multiple sources; assess the credibility and accuracy of each source; quote or paraphrase the data and conclusions of others; avoid plagiarism and follow a standard format for citation

Social Studies:
6.5, 8.2, 8.4, 8.5

6.5 COMPARATIVE CLASSICAL CIVILIZATIONS IN THE EASTERN HEMISPHERE (c. 600 BCE – c. 500 CE): As complex societies and civilizations change over time, their political and economic structures evolve. A golden age may be indicated when there is an extended period of time that is peaceful, prosperous, and demonstrates great cultural achievements. (Standards 2, 3, 5) FOCUS: Case study of Chinese (Qin, Han) and Greco-Roman civilizations (Athens, Sparta, Roman Republic, Roman Empire) 6.5a, 6.5b

8.2 A CHANGING SOCIETY: Industrialization and immigration contributed to the urbanization of America. Problems resulting from these changes sparked the Progressive movement and increased calls for reform. (Standards 1, 2, 4)

8.4 WORLD WAR I AND THE ROARING TWENTIES: Various diplomatic, economic, and ideological factors contributed to the United States decision to enter World War I. Involvement in the war significantly altered the lives of Americans. Postwar America was characterized by economic prosperity, technological innovations, and changes in the workplace. (Standards 1, 2, 4)

8.5 GREAT DEPRESSION: Economic and environmental disasters in the 1930s created hardships for many Americans. Amidst much debate about the appropriate role of government, President Franklin D. Roosevelt helped create intensive government interventions in the United States economy and society. (Standards 1, 3, 5)

WFCF3: 9-12

Science:
HS-LS2-1, HS-LS1-5 HS-LS2-4, HS-LS2-3

HS-LS2-1: Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales

HS-LS1-5: Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.

HS-LS2-4: Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem

HS-LS2-3: Construct and revise an explanation based on evidence for the cycling of matter and flow of energy in aerobic and anaerobic conditions

WFCF4: K-2

Literacy:
KW3, KSL5

KW3: Use a combination of drawing, dictating oral expression, and/or emergent writing to narrate an event or events in a sequence.

KSL5: Create and/or utilize existing visual displays to support descriptions.

Mathematics:
K.CC, 1.NBT

NY-K.CC Counting and Cardinality
Know number names and the count sequence.

NY-1.NBT Number and Operations in Base Ten - Extend the counting sequence. 1. Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.

WFCF4: 3-5

Mathematics:
3.NF, 3.MD

NY-3.NF Number and Operations – Fractions
Develop understanding of fractions as numbers. Note: Fractions are limited to those with denominators 2, 3, 4, 6, and 8.
1. Understand a unit fraction, 1/*b*, is the quantity formed by 1 part when a whole is partitioned into *b* equal parts. Understand a fraction *a/b* as the quantity formed by *a* parts of size 1/*b*

NY-3.MD Measurement and Data
Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.
1. Tell and write time to the nearest minute and measure time intervals in minutes. Solve one-step word problems involving addition and subtraction of time intervals in minutes.
e.g., representing the problem on a number line or other visual model
Note: This includes one-step problems that cross into a new hour.
2a. Measure and estimate liquid volumes and masses of objects using grams (g), kilograms (kg), and liters (l).
Note: Does not include compound units such as cm3 and finding the geometric volume of a container.
2b. Add, subtract, multiply, or divide to solve one-step word problems involving masses or liquid volumes that are given in the same units.
Note: Does not include multiplicative comparison problems involving notions of “times as much.”

WFCF4: 6-8

Science:
MS-PS1-6, MS-PS3-3, MS-PS3-4

MS-PS1-6. Undertake a design project to construct, test, and modify a device that either releases or absorbs thermal energy during a chemical and/or physical process .
MS-PS3-3. Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer .
MS-PS3-4. Plan and conduct an investigation to determine the relationships among the energy transferred, the type of matter, the mass, and the change in the temperature of the sample of matter .

Mathematics:
6.RP

NY-6.RP Ratios and Proportional Relationships
2. Understand ratio concepts and use ratio reasoning to solve problems. Understand the concept of a unit rate a/b associated with a ratio a:b with b ≠ 0 (b not equal to zero), and use rate language in the context of a ratio relationship. Note: Expectations for unit rates in this grade are limited to non-complex fractions.
e.g., “This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there are ¾ cup of flour for each cup of sugar.”
3. Use ratio and rate reasoning to solve real-world and mathematical problems.
d. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.
Note: Conversion of units occur within a given measurement system, not across different measurement systems

WFCF4:9-12

Science
HS-PS1-5, HS-PS1-6, HS-PS1-7, HS-PS1-11, HS-PS4-4

HS-PS1-5 | Reaction Rates
Apply scientific principles and evidence to explain how the rate of a physical or chemical change is affected when conditions are varied.

HS-PS1-6 | Chemical Equilibrium
Refine the design of a chemical system by specifying a change in conditions that would produce increased amounts of products at equilibrium.

HS-PS1-7 | Conservation of Mass
Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

HS-PS1-11 | Acids and Bases
Plan and conduct an investigation to compare properties and behaviors of acids and bases.

HS-PS4-4 | Electromagnetic Radiation and Matter
Evaluate the validity and reliability of claims in published materials of the effects that different frequencies of electromagnetic radiation have when absorbed by matter.

Food & Environment Standards Connections

F&E 1: K-2

Science
K-LS1-1, K-ESS2-2, K-ESS3-1

K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive.

K-ESS2-2. Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.

K-ESS3-1. Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live

F&E 1: 3-5

Science
5-LS2-1, 5-PS3-1

5-LS2-1. Develop a model to describe the movement of matter among plants (producers), animals (consumers), decomposers, and the environment.

5-PS3-1. Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the Sun.

F&E 1: 6-8

Science
MS-LS2-3, MS-LS1-6, MS-LS1-7

MS-LS2-3. Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.

MS-LS1-6. Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.

MS-LS1-7. Develop a model to describe how food molecules are rearranged through chemical reactions to release energy during cellular respiration and/or form new molecules that support growth as this matter moves through an organism.

F&E 1: 9-12

Science
HS-LS2-1, HS-LS1-5, HS-LS2-4, HS-LS2-3, HS-LS1-6

HS-LS2-1: Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales

HS-LS1-5: Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.

HS-LS2-4: Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem

HS-LS2-3: Construct and revise an explanation based on evidence for the cycling of matter and flow of energy in aerobic and anaerobic conditions.

HS-LS1-6: Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.

F&E 2: K-2

Science
K-LS1-1, K-ESS2-2, K-ESS3-1

K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive.

K-ESS2-2. Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.

K-ESS3-1. Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.

1-ESS1-1. Use observations of the Sun, moon, and
stars to describe patterns that can be predicted

1-ESS1-2. Make observations at different times of year to relate the amount of daylight to the time of year.

2-LS2-1. Plan and conduct an investigation to determine if
plants need sunlight and water to grow

2-LS2-2. Develop a simple model that illustrates how plants and animals depend on each other for survival

F&E 2: 3-5

Science:
3-LS2-1, 3-LS4-2, 3-LS4-3, 3-LS3-2, 5-PS3-1, 5-LS1-1, 5-LS2-1

3-LS2-1. Construct an argument that some animals form groups that help members survive.

3-LS4-2. Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing .

3-LS4-3. Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all .

3-LS3-2. Use evidence to support the explanation that traits can be influenced by the environment .

5-PS3-1. Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the Sun .

5-LS1-1. Support an argument that plants get the materials they need for growth chiefly from air and water .

5-LS2-1. Develop a model to describe the movement of matter among plants (producers), animals (consumers), decomposers, and the environment

F&E 2: 6-8

Science:
MS-LS2-3, MS-LS2-1, MS-LS2-2, MS-LS2-4, MS-LS2-5

MS-LS2-3. Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.

MS-LS2-1: Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.

MS-LS2-2: Construct an explanation that predicts patterns of interactions among organisms in a variety of ecosystems .

MS-LS2-4: Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations .

MS-LS2-5: Evaluate competing design solutions for maintaining biodiversity and protecting ecosystem stability

F&E 2: 9-12

Science
HS-LS2-1, HS-LS1-5, HS-LS2-4, HS-LS2-3, HS-LS1-6

HS-LS2-1: Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales

HS-LS1-5: Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.

HS-LS2-4: Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem

HS-LS2-3: Construct and revise an explanation based on evidence for the cycling of matter and flow of energy in aerobic and anaerobic conditions.

HS-LS1-6: Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.

F&E 3: K-2

Science:
K-LS1-1, K-ESS2-1, K-ESS3-2, K-PS3-2, 1-ESS1-2

K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive .

K-ESS2-1. Use and share observations of local weather conditions to describe patterns over time.

K-ESS3-2. Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.

K-PS3-2. Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area .

1-ESS1-2. Make observations at different times of year to relate the amount of daylight to the time of year.

F&E 3: 3-5

Science:
3-LS4-4, 3-ESS2-1, 3-ESS2-2, 3-ESS2-3, 5-ESS1-2, 5-PS3-1, 5-LS2-1

3-LS4-4. Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.

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

3-ESS2-2. Obtain and combine information to describe climates in different regions of the world.

3-ESS2-3. Plan and conduct an investigation to determine the connections between weather and water processes in Earth systems.

5-ESS1-2. Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky .

5-PS3-1. Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the Sun

5-LS2-1. Develop a model to describe the movement of matter among plants (producers), animals (consumers), decomposers, and the environment

Social Studies
3.1, 3.3, 4.1, 5.4, 5.1

3.1 Geographic regions have unifying characteristics and can be studied using a variety of tools. (Standard 3)

3.3 Geographic factors often influence where people settle and form communities. People adapt to and modify their environment in different ways to meet their needs. (Standard 3)

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)

5.4 GEOGRAPHY IN THE WESTERN HEMISPHERE: The diverse geography of the Western Hemisphere has influenced human culture and settlement in distinct ways. Human communities in the Western Hemisphere have modified the physical environment. (Standard 3)

5.1 EARLY PEOPLES OF THE AMERICAS: The first humans in the Western Hemisphere modified their physical environment as well as adapted to their environment. Their interactions with their environment led to various innovations and to the development of unique cultures. (Standards 1, 2, 3)

F&E 3: 6-8

Science:
MS-ESS2-4, MS-ESS2-5, MS-ESS2-6, MS-ESS3-2, MS-ESS-3-3, MS-ESS3-4

MS-ESS2-4. Develop a model to describe the cycling of water through Earth's systems driven by energy from the Sun and the force of gravity .

MS-ESS2-5. Collect data to provide evidence for how the motions and complex interactions of air masses results in changes in weather conditions.

MS-ESS2-6. Develop and use a model to describe how unequal heating and rotation of Earth cause patterns of atmospheric and oceanic circulation that determine regional climates.

MS-ESS3-2 Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.

MS-ESS3-3. Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.

MS-ESS3-4. Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems

F&E 3: 9-12

Science:
HS-LS2-1, HS-LS-2-2, HS-LS-2-6 HS-LS-2-7, HS-LS-2-8, HS-LS3-2, HS-LS3-3, HS-LS4-2, HS-LS4-3, HS-LS4-4, HS-LS4-5, HS-LS-4-6,

HS-LS2-1: Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales

HS-LS2-2: Use mathematical representations to support and revise explanations based on evidence about factors affecting biodiversity and populations in ecosystems of different scales.

HS-LS2-6: Evaluate the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.

HS-LS2-7: Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.

HS-LS2-8: Evaluate the evidence for the role of group behavior on individual and species' chances to survive and reproduce.

HS-LS3-2: Make and defend a claim based on evidence that inheritable genetic variations may result from: (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and/or (3) mutations caused by environmental factors.

HS-LS3-3: Apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population.

HS-LS4-2: Construct an explanation based on evidence that the process of evolution primarily results from four factors: (1) the potential for a species to increase in number, (2) the heritable genetic variation of individuals in a species due to mutation and sexual reproduction, (3) competition for limited resources, and (4) the proliferation of those organisms that are better able to survive and reproduce in the environment.

HS-LS4-3: Apply concepts of statistics and probability to support explanations that organisms with an advantageous heritable trait tend to increase in proportion to organisms lacking this trait.

HS-LS4-4: Construct an explanation based on evidence for how natural selection leads to adaptation of populations.

HS-LS4-5: Evaluate the evidence supporting claims that changes in environmental conditions may result in: (1) increases in the number of individuals of some species, (2) the emergence of new species over time, and (3) the extinction of other species.

HS-LS4-6: Create or revise a simulation to test a solution to mitigate adverse impacts of human activity on biodiversity.

F&E 4: K-2

Science:
K-LS1-1, 2-LS2-1, 2-LS2-2

K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive .

2-LS2-1. Plan and conduct an investigation to determine if plants need sunlight and water to grow .

2-LS2-2. Develop a simple model that illustrates how plants and animals depend on each other for survival

F&E 4: 3-5

Science:
5-LS1-1

5-LS1-1. Support an argument that plants get the materials they need for growth chiefly from air and water.

F&E 4: 6-8

Science:
MS-LS2-3, MS-LS1-6, MS-LS1-7

MS-LS2-3: Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem .

MS-LS1-6. Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms .

MS-LS1-7 . Develop a model to describe how food is rearranged through chemical reactions to release energy during cellular respiration and/or forming new molecules that support growth and/or release energy as this matter moves through an organism .

F&E 4: 9-12

Science:
HS-PS1-5, HS-PS1-6, HS-PS1-7, HS-PS1-11, HS-ETS1-1, HS-ETS1-2, HS-LS1-2, HS-LS1-3 ,HS-LS1-4, HS-LS1-6, HS-LS1-7,

HS-PS1-5 Apply scientific principles and evidence to explain how the rate of a physical or chemical change is affected when conditions are varied.

HS-PS1-6 Refine the design of a chemical system by specifying a change in conditions that would produce increased amounts of products at equilibrium.

HS-PS1-7 Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

HS-PS1-11 Plan and conduct an investigation to compare properties and behaviors of acids and bases.

HS-ETS1-1 Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.

HS-ETS1-2 Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering

HS-LS1-2: Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.

HS-LS1-3: Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.

HS-LS1-4: Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.

HS-LS2-6: Evaluate the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.

HS-LS1-7: Use a model to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed resulting in a net transfer of energy.

F&E 5: K-2

Science:
K-ESS2-2, K-ESS3-1, K-ESS3-3, 2-LS2-2

K-ESS2-2. Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs

K-ESS3-1. Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live

K-ESS3-3. Communicate solutions that will reduce the impact of humans on living organisms and nonliving things in the local environment

2-LS2-2. Develop a simple model that illustrates how plants and animals depend on each other for survival

F&E 5: 3-5

Science:
3-LS3-2, 3-LS4-4, 4-ESS3-1, 4-ESS3-2, 5-LS2-1

3-LS3-2. Use evidence to support the explanation that traits can be influenced by the environment

3-LS4-4. Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change .

4-ESS3-1. Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment .

4-ESS3-2. Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans

5-LS2-1. Develop a model to describe the movement of matter among plants (producers), animals (consumers), decomposers, and the environment .

F&E 5: 6-8

Science:

MS-ESS3-2, MS-ESS3-3, MS-ESS3-4, MS-ESS3-5

MS-ESS3-2. Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects .

MS-ESS3-3. Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment .

MS-ESS3-4. Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's Systems.

MS-ESS3-5 Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.

F&E 5: 9-12

Science:
HS-LS2-2, HS-LS2-5, HS-LS2-6, HS-LS2-7, HS-LS4-6

HS-LS2-2: Use mathematical representations to support and revise explanations based on evidence about factors affecting biodiversity and populations in ecosystems of different scales.

HS-LS2-5: Develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere, and geosphere.

HS-LS2-6: Evaluate the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.

HS-LS2-7: Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.

HS-LS4-6: Create or revise a simulation to test a solution to mitigate adverse impacts of human activity on biodiversity.

F&E 6: K-2

Science:
K-ESS2-2, K-ESS3-1, K-ESS3-3, 2-LS2-2

K-ESS2-2. Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs .

K-ESS3-1. Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live .

K-ESS3-3. Communicate solutions that will reduce the impact of humans on living organisms and nonliving things in the local environment .

2-LS2-2. Develop a simple model that illustrates how plants and animals depend on each other for survival

F&E 6: 3-5

Science:
3-LS3-2, 3-LS4-4, 4-ESS3-1, 4-ESS3-2, 5-LS2-1

3-LS3-2. Use evidence to support the explanation that traits can be influenced by the environment

3-LS4-4. Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change .

4-ESS3-1. Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment .

4-ESS3-2. Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans

5-LS2-1. Develop a model to describe the movement of matter among plants (producers), animals (consumers), decomposers, and the environment .

F&E 6: 6-8

Science:
MS-ESS3-2, MS-ESS3-3, MS-ESS3-4, MS-ESS3-5

MS-ESS3-2. Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects .

MS-ESS3-3. Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment .

MS-ESS3-4. Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's Systems.

MS-ESS3-5 Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.

F&E 6: 9-12

Science:
HS-LS2-2, HS-LS2-5, HS-LS2-6, HS-LS2-7, HS-LS4-6

HS-LS2-2: Use mathematical representations to support and revise explanations based on evidence about factors affecting biodiversity and populations in ecosystems of different scales.

HS-LS2-5: Develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere, and geosphere.

HS-LS2-6: Evaluate the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.

HS-LS2-7: Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.

HS-LS4-6: Create or revise a simulation to test a solution to mitigate adverse impacts of human activity on biodiversity.

Internal & External Influences Standards Connections

I&E 1: K-2

Kindergarten Health:

NPA 1.6 [Students will know:] the body signals that tell people when they are hungry and when they are full (NYC K-5 Health Education Scope & Sequence)

I&E 1: 3-5

Health:
NPA 1.2, 1.8

3rd Grade Health:

NPA 1.2 [Students will know:] A balanced diet means eating a variety of nutrient-rich foods from all five food groups, which include vegetables, fruits, whole grains, protein, and calcium-rich foods such as leafy greens and dairy products.

NPA 1.8 [Students will know:] The importance of establishing healthy habits in our everyday life.

I&E 1: 6-8

Health:
NTR 1.1, 1.5, 1.9, 1.13, 6.1, 4.1, 4.2, 5.1

MS Health:

NTR 1.1 [Students will know:] How the body benefits from eating a variety of nutrient-rich foods, including plenty of fruits and vegetables.

NTR 1.5 [Students will know:] The benefits of drinking plenty of water.

NTR 1.9 [Students will know:] The positive effects of healthy eating on social, emotional, and mental health and academic achievement.

NTR 1.13 [Students will know:] How to identify personal hunger and fullness cues that can support a person's healthy relationship with food

NTR 6.1 [Students will be able to:] Set personal goals and create plans to consume more water and nutrient-rich foods.

NTR 4.1 [Students will be able to:] Practice communication skills that support nutritious food choices, including refusal and negotiation.

NTR 4.2 [Students will be able to:] Ask for help from a trusted adult when trying to improve eating habits.

NTR 5.1 [Students will be able to:] Practice decision making that promotes healthy eating at home, at school, and in the community.

(NYC Grades 6-8 Health Education Scope & Sequence)

I&E 1: 9-12

Health:
NPA 1.5, 1.8, 1.7, 6.1, 5.1, 5.2, 5.3

HS Health:

NPA 1.5 [Students will know:] How to access nutrient-rich food, snacks, and beverages at home, at school, and when dining out.

NPA 1.8 [Students will know:] The potential barriers to eating healthy foods and being physically active.

NPA 1.7 [Students will know:] Choose and enjoy nutrient-rich foods that reflect personal preferences, needs, culture, and budget.

NPA 6.1 [Students will be able to:] Create a personal goal and action plan to drink more water, eat a variety of nutrient-rich foods, and engage in physical activity every day.

NPA 5.1 [Students will be able to:] Identify potential barriers to making healthy decisions about food and physical activity and adopt effective strategies to overcome those barriers.

NPA 5.2 [Students will be able to:] Predict the short- and long-term impact of daily nutrition and physical activity decisions.

NPA 5.3 [Students will be able to:] Make informed decisions about food choices in different settings (e.g., home, school, restaurants, grocery stores).

(NYC Grades 9-12 Health Education Scope & Sequence)

I&E 2: K-2

Language Arts:
R4

KR4: Identify specific words that express feelings and senses. (RI&RL)

1R4: Identify specific words that express feelings and senses. (RI&RL)

2R4: Explain how words and phrases in a text suggest feelings and appeal to the senses. (RI&RL)

I&E 2: 3-5

Health:
NPA 1.8

Elementary Health:

NPA 1.8 [Students will know:] The importance of establishing healthy habits in our everyday life.

I&E 2: 6-8

Health:
NTR 1.9

MS Health:

NTR 1.9 [Students will know:] The positive effects of healthy eating on social, emotional, and mental health and academic achievement.

I&E 2: 9-12

Health:
NPA 7.2

HS Health:

NPA 7.2 [Students will be able to] Practice mindful eating by recognizing hunger and fullness cues.

I&E 3: K-2

Health:
NPA 2.1

2nd Grade Health:
NPA 2.1 [Students will be able to] Discuss how family, friends, and media influence food choices.

I&E 3: 3-5

Health:
NPA 2.1

3rd Grade Health:

NPA 2.1 [Students will be able to] Describe how the influences of media (e.g., advertising and technology) affect food choices and other eating practices and behaviors.

I&E 3: 6-8

Health:
NTR 2.1, 3.2

MS Health:

NTR 2.1 [Students will be able to] Analyze how internal and external influences (e.g., personal values, family, school, community, peers, culture, media) affect eating choices and behaviors.

NTR 3.2 [Students will be able to] Assess the validity and reliability of nutrition-related information, products, and services.

I&E 3: 9-12

Health:
NPA 2.1, 2.2, 3.2

HS Health:

NPA 2.1 [Students will be able to] Analyze the influence of family, peers, school, community, culture, and social norms on personal values and beliefs about nutrition and physical activity.

NPA 2.2 [Students will be able to] Evaluate the impact of media and marketing on body image and personal food and beverage choices.

NPA 3.2 [Students will be able to] Access valid and reliable nutrition information and services online and in the community.

I&E 4: K-2

Health:
NPA 1.4

Kindergarten Health:

NPA 1.4 [Students will know:] How to identify fruits and vegetables to have at meals and for snacks.

I&E 4: 3-5

Health:
NPA 8.1

3rd Grade Health:

NPA 8.1 [Students will be able to:] Demonstrate how to persuade others to make nutrient-rich food choices

I&E 4: 6-8

Health:
NTR 2.1

MS Health:

NTR 2.1 [Students will be able to:] Analyze how internal and external influences (e.g., personal values, family, school, community, peers, culture, media) affect eating choices and behaviors.

I&E 4: 9-12

Health:
NPA 2.1

HS Health:

NPA 2.1[Students will be able to:] Analyze the influence of family, peers, school, community, culture, and social norms on personal values and beliefs about nutrition
and physical activity.

I&E 5: K-2

Health:
PHS 3.2

PHS 3.2 [Students will be able to:] Identify people at home, at school, and in the community who can help keep them safe.

I&E 5: 3-5

Health
NPA 2.2

NPA 2.2 [Students will be able to:] Describe internal and external influences that affect food choices and physical activity.

I&E 5: 6-8

Social Studies:
7.5, 7.4, 8.2, 8.4, 8.5, 8.6, 8.8

7.5 THE CONSTITUTION IN PRACTICE: The United States Constitution serves as the foundation of the United States government and outlines the rights of citizens. The Constitution is considered a living document that can respond to political and social changes. The New York Constitution also has been changed over time. (Standards 1, 5)

7.4 HISTORICAL DEVELOPMENT OF THE CONSTITUTION: The newly independent states faced political and economic struggles under the Articles of Confederation. These challenges resulted in a Constitutional Convention, a debate over ratification, and the eventual adoption of the Bill of Rights. (Standards 1, 5)

8.2 A CHANGING SOCIETY: Industrialization and immigration contributed to the urbanization of America. Problems resulting from these changes sparked the Progressive movement and increased calls for reform. (Standards 1, 2, 4)

8.4 WORLD WAR I AND THE ROARING TWENTIES: Various diplomatic, economic, and ideological factors contributed to the United States decision to enter World War I. Involvement in the war significantly altered the lives of Americans. Postwar America was characterized by economic prosperity, technological innovations, and changes in the workplace. (Standards 1, 2, 4)

8.5 GREAT DEPRESSION: Economic and Environmental disasters in the 1930s created hardships for many Americans. Amidst much debate about the appropriate role of government, President Franklin D. Roosevelt helped create intensive government interventions in the United States economy and society. (Standards 1, 3, 5)

8.6 WORLD WAR II: The aggression of the Axis powers threatened United States security and led to its entry into World War II. The nature and consequences of warfare during World War II transformed the United States and the global community. The damage from total warfare and atrocities such as the Holocaust led to a call for international efforts to protect human rights and prevent future wars. (Standards 1, 2, 3)

8.8 DEMOGRAPHIC CHANGE: After World War II, the population of the United States rose sharply as a result of both natural increases and immigration. Population movements have resulted in changes to the American landscape and shifting political power. An aging population is affecting the economy and straining public resources. (Standards 1, 3, 4, 5)

I&E 5: 9-12

Social Studies:
10.9, 11.5, 11.7

10.9 GLOBALIZATION AND A CHANGING GLOBAL ENVIRONMENT (1990 – PRESENT): Technological changes have resulted in a more interconnected world affecting economic and political relations in some cases leading to conflict and in others to efforts to cooperate. Globalization and population pressures have led to strains on the environment. (Standards 2, 3, 4, 5)

11.5 INDUSTRIALIZATION AND URBANIZATION (1870 – 1920): The United States was transformed from an agrarian to an increasingly industrial and urbanized society. Although this transformation created new economic opportunities, it also created societal problems that were addressed by a variety of reform efforts. (Standards 1, 3, 4, 5)

11.7 PROSPERITY AND DEPRESSION (1920 – 1939): The 1920s and 1930s were a time of cultural and economic changes in the nation. During this period the nation faced significant domestic challenges including the Great Depression. (Standards 1, 4)

Food and Health Standards Connections

F&H 1: K-2

Health:
NPA 1.1 [Students will know:] Food gives us energy and helps us grow.

NPA 1.2 [Students will know:] It is important to eat a variety of nutrient-rich foods.

NPA 1.3 [Students will know:] It is important to eat fruits and vegetables of every color for good health.

F&H 1: 3-5

Health:
NPA 1.5, 1.4

3rd Grade Health:

3 NPA 1.5 Whole grains, fruits, and vegetables are foods that provide our bodies with the fiber they need to digest food in a healthy way

4th Grade Health:

4 NPA 1.4 Our bodies need water and fiber, such as from whole grains, to process and digest food in a healthy way.

F&H 1: 6-8

Science:
MS-LS1-3

MS-LS1-3. Construct an explanation supported by evidence for how the body is composed of interacting systems consisting of cells, tissues, and organs working together to maintain homeostasis.

Health:
NTR 1.12

MS Health:
NTR 1.12 [Students will know:] How nutrition choices affect digestion, including the delivery of nutrients and energy to the body.

F&H 1: 9-12

Health:
NPA 1.9

NPA 1.9 [Students will know:] How nutrition choices impact digestion, including the delivery of nutrients and energy to the body.

Science:
HS-LS1-2, HS-LS1-6, HS-PS1-2, HS-PS3-3

HS-LS1-2: Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.

HS-LS1-6: Analyze how the body's systems use chemical reactions to maintain homeostasis.

HS-LS1-7. Use a model to illustrate that aerobic cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed resulting in a net transfer of energy.

HS-PS1-2: Analyze changes in matter and energy during chemical reactions.

HS-PS3-3: Design and analyze systems that convert energy from one form to another.

F&H 2: K-2

Health:
NPA 1.7, 1.8

Kindergarten Health:
K/1 NPA 1.7 [Students will know:] The benefits of drinking plenty of water, especially when being physically active.

2nd Grade Health:
2 NPA 1.8 [Students will know:] The benefits of drinking water, especially before, during, and after physical activity.

F&H 2: 3-5

Health:
NPA 1.1

3rd Grade Health:
3 NPA 1.1 The benefits of eating nutrient-rich foods, drinking plenty of water, exercising, and getting adequate sleep.

F&H 2: 6-8

Health:
NTR 1.5

MS Health:
NTR 1.5 [Students will know:] The benefits of drinking plenty of water.

F&H 2: 9-12

Health:
NPA 1.6

HS Health:
NPA 1.6 [Students will know:] The benefits of drinking water every day.

Science:
HS-LS1-2, HS-LS1-3

HS-LS1-2. Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.

HS-LS1-3. Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis

ents will know:] The signs of disordered eating and its connection to social, emotional, mental, and physical health.

F&H 3: K-2

Health:
NPA 1.1, 1.2

Kindergarten Health:
NPA 1.1 [Students will know:] Food gives us energy and helps us grow

NPA 1.3 [Students will know:] It is important to eat fruits and vegetables of every color for good health.

NPA 1.4 [Students will know:] How to identify fruits and vegetables to have at meals and for snacks.

First Grade Health:
NPA 1.1 [Students will know:] Healthy eating patterns that provide energy and help the body grow and develop.

NPA 1.2 [Students will know:] The benefits of eating breakfast every day.

F&H 3: 3-5

Health:
NPA 1.1

3rd Grade Health:
NPA 1.1 [Students will know:] The benefits of eating nutrient-rich foods, drinking plenty of water, exercising, and getting adequate sleep.

F&H 3: 6-8

Health:
NTR 1.1, 1.2, 1.3, 1.4, 1.9

MS Health:

NTR 1.1 [Students will know:] How the body benefits from eating a variety of nutrient-rich foods, including plenty of fruits and vegetables.

NTR 1.2 [Students will know:] Guidelines for eating to promote health.

NTR 1.3 [Students will know:] The importance of protein, fats, carbohydrates, fiber, calcium, and other nutrients, and their food sources.

NTR 1.4 [Students will know:] The importance of limiting the consumption of saturated fat, added sugar, sodium, ultra-processed foods, and caffeine.

NTR 1.9 [Students will know:] The positive effects of healthy eating on social, emotional, and mental health and academic achievement.

F&H 3: 9-12

Health:
NPA 1.1, 1.2, 1.3, 1.4, 1.5

HS Health:

NPA 1.1 [Students will know:] The relationship between food choices, physical activity, chronic diseases, and overall health.

NPA 1.2 [Students will know:] The social, mental, emotional, and physical benefits of eating nutrient-rich foods and beverages and engaging in physical activity.

NPA 1.3 [Students will know:] Guidelines for eating and engaging in daily moderate-to-vigorous physical activity to promote health.

NPA 1.4 [Students will know:] The benefits of proteins, fats, carbohydrates, fiber, calcium, and other nutrients, and their food sources.

NPA 1.5 [Students will know:] How to access nutrient-rich food, snacks, and beverages at home, at school, and when dining out.

F&H 4: K-2

Health:
NPA 1.2, 1.3, 1.4, 1.5, 1.6, 1.7

2nd Grade Health:

NPA 1.2 [Students will know:] Nutrition guidelines can help us make healthy food choices (e.g., MyPlate.gov, NYC.gov Healthy Eating Formula).
NPA 1.3 [Students will know:]How to group foods using a nutrition guideline, such asMyPlate, to understand healthy eating.
NPA 1.4 [Students will know:] The importance of calcium-rich foods (e.g., leafy greens and dairy products) for strong bones.
NPA 1.5 [Students will know:] Healthy snacks include whole foods, such as fruits and vegetables.

F&H 4: 3-5

Health:
NPA 1.1 1.2, 1.3, 1.4, 1.5, 1.6, 1.7

4th Grade Health:
NPA 1.2 [Students will know:] Our bodies need a balanced diet that includes the six essential nutrients to grow, function properly, and stay healthy.
NPA 1.3 [Students will know:] The nutrients our bodies need to grow and stay healthy are protein, carbohydrates, vitamins, minerals, water, and fats.
NPA 1.4 [Students will know:] Our bodies need water and fiber, such as from whole grains, to process and digest food in a healthy way.
NPA 1.5 [Students will know:] Some ways that nutrients help our bodies stay healthy.
NPA 1.6 [Students will know:] How to identify foods with high sugar content (e.g., soda, fruit drinks, and candy) and the negative effects of eating foods with too much added sugar.
NPA 1.7 [Students will know:] Food labels list ingredients, which gives us the information to manage food allergies and practice healthy eating habits.

5th Grade Health:
NPA 1.1 [Students will know:]The benefits of eating a variety of nutrient-rich foods, including plenty of fruits and vegetables.
NPA 1.2 [Students will know:] The nutrients our bodies need to help us grow and stay healthy are protein, carbohydrates, vitamins, minerals, water, and fats.
NPA 1.3 [Students will know:] Guidelines for eating and physical activity to promote health.
NPA 1.4 [Students will know:] The benefits of drinking plenty of water and avoiding non- nutritious beverages.
NPA 1.5 [Students will know:] Food labels provide us with key information to help us make healthy choices when buying foods.
NPA 1.6 [Students will know:] The importance of limiting the consumption of saturated fat, added sugar, and sodium.
5 NPA 1.8 [Students will know:] The positive effects of eating nutrient-rich foods and being physically active on social, emotional, and cognitive health.

F&H 4: 6-8

Health:
NTR 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 3.1, 7.2

MS Health:
NTR 1.2 [Students will know:] Guidelines for eating to promote health.
NTR 1.3 [Students will know:] The importance of protein, fats, carbohydrates, fiber, calcium, and other nutrients, and their food sources.
NTR 1.4 [Students will know:] The importance of limiting the consumption of saturated fat, added sugar, sodium, ultra-processed foods, and caffeine.
NTR 1.5 [Students will know:] The benefits of drinking plenty of water.
NTR 1.6 [Students will know:] The value of different nutrition options based on culture, needs, and preferences.
NTR 1.7 [Students will know:] How access to nutrient-rich foods in school, at home, and in the community affects food choices.
NTR 1.8 [Students will know:] How to select nutrient-rich foods when snacking and dining out.
NTR 3.1 [Students will be able to:] Evaluate food labels and ingredient lists to help manage serving size, nutrients, calories, and potential allergic reactions.
NTR 7.2 [Students will be able to:] Develop a nutrient-rich menu and create nutrient-rich meals

F&H 4: 9-12

Health:
NPA 1.3, 1.4, 1.5, 3.1, 7.1

HS Health:
NPA 1.3 [Students will know:] Guidelines for eating and engaging in daily moderate-to-vigorous physical activity to promote health.
NPA 1.4 [Students will know:] The benefits of proteins, fats, carbohydrates, fiber, calcium, and other nutrients, and their food sources.
NPA 1.5 [Students will know:] How to access nutrient-rich food, snacks, and beverages at home, at school, and when dining out
NPA 3.1 [Students will know:] Examine nutrition labels to inform food choices.
NPA 7.1 [Students will know:]Create nutrient-rich meals that reflect personal preferences, needs, culture, and budget.