

GCV&M Curriculum Connections (Grades 2-12)

Guided Maple Tour “Sap Syrup Sugar”

Guided through a series of stations at the Nature Center only, groups will explore the history of maple sugaring. Students will try their hand at tapping a tree, taste sugar on snow, watch sap boil into syrup in our sugarhouse, take a walk on the maple history trail, and talk with historic interpreters to learn how traditions of making maple syrup have changed over the years.

FIELD TRIP OBJECTIVES

- The student will designate important changes in the history of maple sugaring production.
- The student will recount the steps for the process of turning sap into syrup and then sugar.
- The student will locate and identify geographic features that pertain to the Sugar Bush while on a nature hike.
- The student will interact with interpreters to gain an understanding of historical changes throughout 19th Century NYS.

KEY WORDS

Natural Resources	Evaporation
Reverse Osmosis	Culture
Labor	Environment
Community	Production
Fuel	Sugar Content
Hydrometer	Tree Species
Tools	Spiels
Haudenosaunee	Farming



Social Studies Standards

2nd Grade

- 2.5b** The location of physical features and natural resources often affects where people settle and may affect how those people sustain themselves.
- 2.8b** People make decisions to buy, sell, and use money based on their needs, wants, and the availability of resources.
- 2.8c** Scarcity, the price of goods and services, and choice all influence economic decisions made by individuals and communities.

3rd Grade

- 3.3a** Geographic factors influence where people settle and their lifestyle. Some geographic factors make a location more suitable for settlement, while others act as deterrents.
- 3.3b** People make adaptations and modifications to the environment. Advancements in science, technology, and industry can bring about modifications to the environment and can have unintended consequences on the environment. People have attempted to take actions to protect the environment.
- 3.4a** People in world communities use legends, folktales, oral histories, biographies, and historical narratives to transmit cultural histories from one generation to the next.

4th Grade

- 4.2a** Geographic factors often influenced locations of early settlements. People made use of the resources and the lands around them to meet their basic needs of food, clothing, and shelter.
- 4.2c** Each Native American group developed a unique way of life with a shared set of customs, beliefs, and values.
- 4.6d** Farming, mining, lumbering, and finance are important economic activities associated with New York State.

5th Grade

- 5.1b** Human populations that settled along rivers, in rainforests, along oceans, in deserts, on plains, in mountains, and in cold climates adapted to and made use of the resources and environment around them in developing distinct ways of life.
- 5.3b** Europeans encountered and interacted with Native Americans in a variety of ways.
- 5.4c** The physical environment influences human population distribution, land use, and other forms of economic activity.
- 5.7a** Different types of economic systems have developed across time and place within the Western Hemisphere. These economic systems, including traditional, market, and command, address the three economic questions: what will be produced, how it will be produced, and who will get what is produced?
- 5.7b** Peoples of the Western Hemisphere have engaged in a variety of economic activities to meet their needs and wants.

7th Grade

- 7.1a** Geography and climate influenced the migration and cultural development of Native Americans. Native Americans in North America settled into different regions and developed distinct cultures.
- 7.2b** Different European groups had varied interactions and relationships with the Native American societies they encountered. Native American societies suffered from loss of life due to disease and conflict and loss of land due to encroachment of European settlers and differing conceptions of property and land ownership.
- 7.2c** European nations established colonies in North America for economic, religious, and political reasons. Differences in climate, physical features, access to water, and sources of labor contributed to the development of different economies in the New England, Middle, and Southern Colonies.

Science Standards

2nd Grade

2-PS1-4. Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.

2-LS2-1. Plan and conduct an investigation to determine if plants need sunlight and water to grow.

2-LS4-1. Make observations of plants and animals to compare the diversity of life in different habitats.

K-2-ETS1-1. Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.

3rd Grade

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-LS1-1. Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.

3-ESS2-2. Obtain and combine information to describe climates in different regions of the world.

4th Grade

4-LS1-1. Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

5th Grade

5-PS1-3. Make observations and measurements to identify materials based on their properties.

5-LS1-1. Support an argument that plants get the materials they need for growth chiefly from air and water.

5-ESS2-1. Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.

6th Grade

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-LS2-2. Construct an explanation that predicts patterns of interactions among organisms in a variety of ecosystems.

MS-LS1-5. Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.

7th Grade

MS-PS1-4. Develop a model that predicts and describes changes in particle motion, temperature, and phase (state) of a substance when thermal energy is added or removed.

MS-PS1-7. Use evidence to illustrate that density is a property that can be used to identify samples of matter.

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.

8th Grade:

MS-ESS1-1. Develop and use a model of the Earth-Sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the Sun and moon, and seasons.

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-ESS3-4. Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.

Science Standards

9th–12th Grade:

HS-ESS1-7. Construct an explanation using evidence to support the claim that the phases of the moon, eclipses, tides and seasons change cyclically.

HS-ESS2-2. Analyze geoscience data to make the claim that one change to Earth's surface can create feedbacks that cause changes to Earth's systems.

HS-ESS2-8. Evaluate data and communicate information to explain how the movement and interactions of air masses result in changes in weather conditions.

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HS-ESS3-2. Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios.

HS-ESS3-3. Create a computational simulation to illustrate the relationships among management of natural resources, the sustainability of human populations, and biodiversity.

HS-ESS3-4. Evaluate or refine a technological solution that reduces impacts of human activities on natural systems.

HS-LS2-3. Construct and revise an explanation based on evidence for the cycling of matter and flow of energy in ecosystems.

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.