

A Brief Look at Meadowcroft Rockshelter with a Subsequent Focus on the Haudenosaunee (Iroquois)

*Lea Blumenfeld
Clayton and Grandview Elementary Schools*

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Overview

One purpose of this unit is to take a brief look at evidence of the earliest First Nations peoples in North America, dating back to prehistoric times. The social studies books currently in use do not trace back the peoples of North, Central, and South America beyond the advent of the Aztecs, Incas, and Mayas. With the close proximity of Meadowcroft Rockshelter to Pittsburgh, the unit will address the archeological and anthropological findings there. This is significant because the discoveries indicate that people inhabited the area 16,000 to 17,000 years ago. Previously it was thought, and by some still is, that no humans existed here before 11,200 years ago. Pittsburgh Public School children will become aware of a phenomenon of international interest within an hour's drive from their homes. Most of the unit will focus on the Haudenosaunee (Iroquois) Confederacy and how they influenced the development of the Commonwealth of Pennsylvania as well as the United States of America and the philosophy of people in other parts of the world. To show respect for the First Nations peoples and their right to self-determination, from this point on, I shall use the First Nations name that they use for themselves and not the French word, Iroquois, unless the latter appears in a title, quotation, or document. The unit will enable the children to see how the First Nations peoples have suffered from racism, broken treaties, theft of property, cultural sublimation, and genocide, and how some of these acts of aggression continue to this day. It will also demonstrate that, unlike the impression left by many books and movies, Native Americans still live here today. Because the library is connected to all of the subject areas in the schools, this will be an interdisciplinary unit, touching upon literature, history, geography, cultural

geography, science, art, and music. The targeted audiences will be mainly fourth and fifth graders, with some activities including the third graders. However, with some modifications the unit can be utilized by upper grades as well.

Rationale

The fifth grade social studies textbooks in the Pittsburgh Public Schools do not trace the existence of First Nations peoples back beyond the Aztec, Maya, and Inca. Our children are not aware that people were living on our continent before then. This unit proposes to broaden their knowledge in that regard. Within an hour's drive from their city, there is a site to which they can travel that provides evidence, although admittedly mired in controversy, of the presence of First Nations inhabitants thousands of years before what previously had been accepted as the earliest known date. Our classes can tour the site and see it with their own eyes. Many of us proudly possess arrowheads dug up from backyards from more recent habitations, but we are unaware of how much earlier human beings inhabited this region.

Evidence has been uncovered revealing that First Nations peoples existed on the continent of North America prior to the end of the last ice age. Paleo-Indian hunters left behind skeletons along with those of the game that they hunted. Those animals included big-horned bison, camels, early horses, mammoths, and mastodons. The animals were grass-eaters, leaving behind them well-marked trails (Farb 197). The people left behind not only their skeletons, but their spear points as well. A “. . . relatively rapid climate change that brought on the relatively rapid disintegration of the glacial ice . . .” was responsible for an inordinate number of plants and animals becoming extinct, “. . . not unlike what had happened in all the previous interstadials” (Adovasio 56). The extinction of the mammals was “of nearly the same magnitude as the dying out of the dinosaurs some 65, 000,000 years earlier” (Farb 203). When the big game died out during this period, the Paleo-Indians had to change their methods of obtaining a food supply. They switched from big-game hunting to planting, fishing, and small-game hunting.

Approximately thirty-four miles from Pittsburgh a site called Meadowcroft Rockshelter is located. It is about seven and a half miles west of the Ohio River and forty feet above Cross Creek, a tributary of the Ohio. There an archeologist, James M. Adovasio, and his crew uncovered evidence of First Nations people that pre-dated other locations of what were thought to have been the earliest human inhabitants of the continent. An unfluted spear point, lanceolate in shape, and intact, was uncovered in a level of the dig that was approximately 12,000 years old. It was named the Miller lanceolate for Albert Miller, the owner of the land

on which Meadowcroft is located (Adovasio 156). During twenty-seven years of the project some two million artifacts and remains of flora and fauna have been recovered from this site (Adovasio 159). Dr. Adovasio was adamant that the dig be a multidisciplinary effort. "The central goal or theme of the operation was the systematic acquisition, analysis, and integration of any and all data bearing on the archaeology, history, paleocology, geology, geomorphology, pedology, hydrology, climatology, and floral and faunal succession of the entire Cross Creek drainage." He also wanted the most sophisticated and most precise methods of collecting, analyzing, and interpreting to be utilized (Adovasio 164). This attention to detail and the multidisciplinary approach have stood the team in good stead whenever others have disputed the findings. The Meadowcroft site was the first archeological dig to be connected to a mainframe computer. "One of the most important aspects of all we accomplished . . . provided a nearly unique sequence of human habitation over a period of some 16,000 years" (Adovasio 171). Fifty-two carbon datings have been run using four different laboratories. Thirteen of those datings were from the pre-Clovis strata. They provide evidence that Meadowcroft Rockshelter ". . . is the longest continuous use of a single place in all of North American prehistory" (Adovasio 181 and 186). Since the beginning of archeological studies, people (overwhelmingly male), have concentrated on what prehistoric life was like for men. Stone tools and weapons associated mostly with males last longer than cloth, largely associated with females. However, in many ancient habitats, four times as many fiber artifacts as wooden ones and twenty times as many as stone ones have been uncovered. Meadowcroft has revealed a basketry piece dating from 11,300 to 12,800 years ago and a seemingly intentionally cut bark piece, like those used in plaiting, dating from 17,000 to 19,000 years ago (Adovasio 286-287).

The images that we have of First Nations peoples prior to and even after European contact (from a variety of misinformed sources) are those of nomadic hunters. The facts disclose that ". . . the majority had been living in villages, towns, and cities since long before Columbus" (Wright 8). The earliest people who stopped at Meadowcroft were hunter-gatherers, but not big game specialists (Adovasio 187).

While the plant and animal supplies were changing, the Archaic people were emerging, and ". . . they were preadapted to the changes" (Farb 207). In the Eastern Woodlands, they were fishers, hunters of smaller animals, and gatherers. This period lasted until around 1,000 B.C.E. A variety of mounds built over a number of years have been attributed to the Mound Builders, the ancestors of modern First Nations peoples. These structures have been found from New York to the Gulf of Mexico and as far west as Nebraska. They were temple mounds, effigy mounds, burial mounds, and defensive mounds, many very large and elaborate and requiring a highly sophisticated design and workmanship. Some

estimates date them from around 1800 B. C. E. to after A. D. 1200. Some of the builders dwelled in towns and cities (Adovasio 10-13, 26 and Factmonster 1,2).

Iroquois do not wish to be subjects of any foreign nation . . . We ask only to be left to our way and our traditions. We want the same freedom for ourselves that the whites wanted when they fled European tyranny (Clinton Rickard, Skaruren, 1966 in Wright 322).

No one knows just when the Haudenosaunee arrived on the scene. However, because of their contributions to the development of the United States, as well as their presence in, and influence on, the Commonwealth of Pennsylvania, I have chosen to write about this confederacy for this curriculum unit. Our books do not inform the children about the debt that is owed to the Haudenosaunee Confederacy for the government that currently exists in Pennsylvania and in the United States or for some of the symbols representing the national government. Many of us have been under the impression at least, if we haven't been told outright, that our democracy in this country is due to our heritage from Europe. In fact, the colonists had left behind in the mother countries monarchs, the divine right of kings, voiceless masses, subordination of women, certainly no individual rights, no democracies. I was not aware of the Haudenosaunee influences until recently, as an adult. "No tribe was more influential than the Iroquois, although its power had peaked a century earlier. . ." (Nester 18).

The Europeans often described the First Nations peoples as "ignorant savages." Presently it also is easy to find people who regard the Caucasian inhabitants of North America in the fifteenth through nineteenth centuries as superior in knowledge and sophistication to the Native Americans at that time. In point of fact, the Haudenosaunee legends reveal that they understood the geographic and topological features of the continent. They knew that the land was bordered by oceans. They were aware of the Rocky Mountains (Wright 222).

The Haudenosaunee, or the People of the Longhouse, were called Iroquois by the French. According to one source, it was a corruption of a name meaning "poisonous snakes" bestowed upon them by their enemies, the Ojibwa (Bial 16). Another source maintains that the word came from a First Nations word meaning "killer people" (Sonneborn 14). According to their own history, long ago they lived in the western part of the United States. They inhabited the Great Plains and an area along the Mississippi River. For some reason they migrated to the land of the rising sun, the east, with various bands settling in different places in what would be the eastern part of Canada and the United States. A second migration followed. Eventually the main band settled near the mouth of the Oswego River. After game became scarce, many sought better hunting grounds. The Skaruren (Hemp Gatherers) or Tuscaroras went south. The Onundowahgah (People of the

Great Hill) or Seneca moved to the Canandaigua Lake region. The Gayogoho:no (People of the Great Swamp) or Cayugas traveled to the Cayuga Lake area. The Onundagaono (People of the Hills) or Onondaga moved to Onondaga Creek. The Onayotekaono (People of the Upright Stone) or Oneida settled near Oneida Lake. The Kahnien'Kehaka (People of the Flint) or Mohawk traveled to the Mohawk River (Tehanetorens 5, 10, and 11). After a time, the nations began to fight with each other with resulting losses.

A Wendat (Huron) holy person, Deganawide, and an Onoda'gega, Hiawatha (not the person in Longfellow's poem), convinced five nations to form a confederacy. While there is no consensus for the date of the formation of the Confederacy or League, it existed well before European contact, according to Haudenosaunee sources and others. One timeline shows that it formed between 1400 and 1500 (Sonneborn appendix), while another indicates it occurred between 1570 and 1600 (Bial appendix), and yet a third says it took place between the mid-1400s and early 1600s (Sneve 6). Barbara Mann, an American Studies doctoral student at Toledo University, and Jerry Fields, an astronomer with expertise in the history of solar eclipses, used solar eclipse data with Haudenosaunee oral history and documented sources to calculate that the last of the five nations signed the agreement 31 August 1142 (Johansen 1, Kahionhes interview). These discrepancies can be used to show the classes that one should always check a variety of sources. The Great Peace unified the five nations and brought peace amongst them. It also enabled them to be a formidable foe to those who opposed them. The League was set up as the longhouses were. The Kahnien'Kehaka became the keepers of the Eastern Door. The Onundawahgah became the keepers of the Western Door. The Onundagaono were made the keepers of the Council Fire. The Gayogohono are known as the Younger Brothers as are the Onayotekaono (Sneve 9). “. . . at its height during the seventeenth and eighteenth centuries, it was the greatest native polity in North America, its influence stretching a thousand miles from Quebec to Kentucky and from Pennsylvania to Illinois” (Wright 115).

Deganawide gave the League structure through the Great Binding Law or Gayanashagowa. It allowed for “. . . the separation of powers, checks and balances, ratification, public opinion, and equality of all peoples” (Kanatiosh 2). The Law also included the “the right of popular nomination, the right of recall and of woman suffrage, all flourishing in the old America . . . centuries before it became the clamor of the new America of the white invader” (Arthur C. Parker in Farb 120). It “. . . regarded leaders as servants of the people, rather than their masters . . . upheld freedom of expression in political and religious matters, and it forbade the unauthorized entry of homes” (Johansen xiv). This law was recorded on wampum belts as well as in oral tradition. “It is unfortunate that many Anglo-scholars do not accept wampum belts as a legitimate form of writing, for these

symbols when read by the elders, speak volumes” (Kanatiosh 2). There are one hundred seventeen sections of this constitution. Each of the nations is autonomous when dealing with its own affairs. The governing body is the Grand Council composed of fifty chiefs, which deals with problems of the Confederacy as a whole. This is not unlike the relationship between the individual states of the United States and the federal government (Kanatiosh 2). As a symbol of the League, Deganawide planted the Tree of Peace, a white pine with four white roots branching in the directions of the four winds. Warriors buried their weapons beneath the tree. An eagle perched on top of the tree was thought of as a guardian. Any person or nation was welcome to take shelter under the tree, rendering it a forerunner to the United Nations (Tehanetorens 13, 14 and Sneve 7).

By the time of the Treaty Council in Lancaster, Pennsylvania in the summer of 1744, a sixth nation had been added to the League. The Skaruren nation was admitted after being forced out of North Carolina. The Onundagaono sachem, Canassatego, was disturbed by the arguing among the Maryland, Virginia, and Pennsylvania commissioners. He therefore suggested, on July 4th, that they form a union and pointed out the advantages of his own Haudenosaunee League, militarily as well as politically. None other than Benjamin Franklin was present taking notes. He and others considered the League’s example, and in 1751 he wrote:

It would be a very strange thing if Six Nations of ignorant savages should be capable of forming a scheme for such a union, and be able to execute it in such a manner as that it has subsisted ages, and appears indissoluble; and yet that a like union should be impracticable for ten or a dozen English colonies (Wright 116, Kanatiosh 3, and Johansen 61, 62, and 66).

Franklin was successful in his attempt to persuade the Albany Congress participants to confederate similarly to the Haudenosaunee. However, when the delegates took the Albany Plan of Union back to their individual colonial assemblies, they failed to approve it. The Albany Plan was reconfigured later into the Articles of Confederation. Franklin persisted in his drive until the United States was born (Johansen 70, 74 and Wright 133).

The Haudenosaunee influence on Franklin’s thought and deed was also evident in his forming a militia to defend Philadelphia against Dutch and French raids. This militia *elected* its own officers, as did the People of the Longhouse (Johansen 63).

Thomas Jefferson, as well as Benjamin Franklin, was influenced by the First Nations people. His views of Native societies are evident in the Declaration of Independence. He wrote of the roles of public opinion, consensus, and egalitarian distribution of wealth in maintaining order among First Nations as opposed to the controlling apparatus utilized in European societies (Johansen 102-104).

Although Haudenosaunee gave much aid at great sacrifice and shed their blood on both sides during the Revolutionary War, when it came time for peace, neither the British nor the American colonists remembered their allies in the Treaty of Paris. It was an agreement between two Caucasian entities with no mention of their First Nations allies. This resulted in the Longhouse, and other First Nations, being at the mercy of unrestrained further encroachment. The Americans, to punish the pro-British Haudenosaunee, forced them to sign the Treaty of Fort Stanwix thereby relinquishing lands in Ohio, Pennsylvania, and New York. The British refused to grant supplies and provisions to the Haudenosaunee who had sacrificed their lives and land for them. The Lenni Lenapi had been promised a First Nations state to be added onto the thirteen states for fighting on the side of the colonies. Although they, too, gave their lives to the struggle, not only was the promise of their own colony not honored, they were driven out of their existing land (Wright 139-140, Tehanetorens 88, 90, 91, and Sonneborn 37)!

There are similarities between the United States Constitution and the Great Law of Peace. The preamble of the former and the first three wampums of the latter both emphasize unity and show a concern for future generations. There is a proscribed number of legislators in both with an accompanying decision-making process accomplished in sections or houses. Provisions for impeachment exist in both documents. Executive-like power is vested in a particular Onundagaono in the Great Law of Peace while the President holds executive power according to the United States Constitution. The clan mothers select the chiefs, but the current chiefs must approve their choices, thereby providing for checks and balances. It wasn't until 1920 that the nineteenth amendment acknowledged the right of women to vote. Other similarities exist between the two documents as well (Kanatiosh 4).

The United States borrowed symbols from the People of the Longhouse as well as political, military, and sociological ideas. Haudenosaunee symbols are present on the one-dollar bill. The eagle and the bound arrows that it holds in its talons are taken from the League. The bound arrows stand for "the unification of the Confederacy" (Iroquois.net History page). The United States shield featuring the Haudenosaunee eagle once held five arrows, but the number was changed to thirteen (Wright 116).

The People of the Longhouse extended their influence beyond the Atlantic. Two Europeans, Francisco Vitoria and Hugo Grotius, who were instrumental in developing modern international law, were affected by the government of the Haudenosaunee (Felix S. Cohen in *Tehanetorens* 79). Lewis Henry Morgan, an acquaintance of Hasanoanda (Ely S. Parker), an Onundawahgah, wrote books about the Haudenosaunee government with the guidance of Hasanoanda. Karl Marx and Friedrich Engels read those books with enthusiasm and were impressed by the equality of class and gender (Wright 117).

Ongwaterohiathe (Shikellamy), an Onayotekaono vice-regent, was sent from the League to watch over their conquered nations residing in Pennsylvania. The vice-regent represented the People of the Longhouse at many meetings with the governing body of Pennsylvania. In 1736 the Haudenosaunee deeded to Pennsylvania their Susquehanna holdings. After most of the signers went home, William Penn's sons, not honorable as their father was, and other Whites, drew up a second deed. They had the remaining Longhouse People, most of whom were drunk, relinquish the land owned by the Lenni Lenape (Delawares). This caused the Lenni Lenape and their allies to enter the Seven Years War on the side of the French. It embroiled Pennsylvania in very bloody warfare from 1755 to 1764 (*Tehanetorens* 110-112).

Many non-Natives may be surprised to learn of the eloquent speeches, astute observations, and witty barbs made by a number of Haudenosaunee diplomats, chiefs, and orators. Cornplanter, an Onundawahgeh, spoke at the Union capital in Philadelphia in 1790 pointing out the unfairness of forced treaties that involved the western nations in the Ohio Valley (Wright 224-225). In 1805 a Boston missionary proclaimed that the Onundawahgah were worshipping incorrectly and their ways were not pleasing to the Great Spirit. He maintained that there was only one religion, and that the Onundawahgah were in great darkness. He, of course, had come to enlighten them. After listening in silence and irritation, Sagoyewatha (Red Jacket) responded with one of the best answers to narrow-minded patronizing preaching. He spoke politely about diversity of religion and custom and color. He closed by saying that he and his people would observe the effect of the preaching on their White neighbors. "If we find it does them good, makes them honest and less disposed to cheat Indians, we will then consider again of what you have said" (Wright 230-232 and *historymatters* 1-3).

Not only did European Americans borrow ideas from the Haudenosaunee for political and military organizations and strategies a popular holiday currently celebrated in the United States was borrowed from them as well. Among the festivals that the Haudenosaunee celebrated throughout the year, Thanksgiving was held in October. Subsequent European-American Thanksgivings with attendant foods introduced by First Nations peoples have

taken little or no heed of where the custom originated. “The loan went unacknowledged” (Wright 121).

The many wrongs that have been visited upon the Haudenosaunee have continued to this day. Consider the flooding of the Cornplanter Grant lands to provide for the Kinzua Dam in northwestern Pennsylvania. Alternative plans were proposed that would not molest the Skaruren lands. Although public opinion urged the federal government not to seize the land, the court upheld breaking the 1794 treaty which reads in part “. . . The United States will never claim . . . nor disturb the Seneca Nation” (Sonneborn 44-45 and Wright 328). New York State Power Authority decided to seize Skaruren lands for a project at Niagara Falls. Once again the United States Supreme Court voted (by five to four) to rob the First Nations. Justice Hugo Black wrote for the minority, “Great nations, like great men, should keep their word” (Wright 328 and Sonneborn 45-46). Canada condemned and seized waterfront property in two Kahnien’Kehake territories to make way for the St. Lawrence Seaway. Not only was the land taken, but the project brought PCB’s, killing cattle and other fauna. It resulted in water, land, air, and noise pollution. It destroyed fishing and farming (Wright 328-329). In 1990, the mayor of Oka, Quebec sent police when Kahnien’Kehake people protested the expansion of a golf course. The people had objected to the initial golf course construction, but the federal government said that treaties made prior to 1867, the date of Canada’s dominion status, were not their concern. After a protest involving blocking a freeway and arteries (built on Kahnien’Kehake land), the Canadian prime minister allowed the Quebec premier to send in tanks, armed aircraft, and at least 4,000 soldiers against the Kahnien’Kehake. The combined Haudenosaunee councils wrote to the prime minister asking for a review of unfair land claims policies. The prime minister responded by describing the demands as “bizarre” and seemingly incredulously accusing the First Nations people of trying to assume independent nation status. The premier of Quebec “said that he was defending democracy against people who did not believe in it” (Wright 339). The very people from whom Euro-Canadians and Euro-Americans learned democracy! The army interfered with reporters behind Kahnien’Kehake lines getting out the news. The army attacked unarmed men, women, and children. At least as of 2002, the land dispute was still unsettled (Wright 332-340, Sonneborn 47, “Oka crisis” in wikipedia, and *Edmonton Journal* editorial). It continues.

Many books and films encourage children to think that Native Americans only existed in the past. This unit will demonstrate that despite decimation and even annihilation of some nations, others have survived and live amongst them.

This interdisciplinary unit meets some of the standards currently utilized by the Pittsburgh Board of Education: Arts and Humanities Standards #1, #2, #3, and

#4; Citizenship Standards #1, #2, and #9; Environment and Ecology Standards #2, #4, and #5; Information and Literacy Standards #1, #2, #3, #5, and #9; Mathematics Standard #2; and Reading, Writing, Speaking, and Listening Standards #1, #2, #3, #4, and #5. (See appendix for these standards written out.)

Objectives

The overall goals of the unit are two: for the classes to learn that humans existed on the continent of North America longer ago than was first thought with proof of this in close proximity to Pittsburgh and for them to understand that the Haudenosaunee greatly influenced the development of the United States. These are in keeping with Citizenship Standard #1.

The pupils' being able to find Avella, Pennsylvania (the location of Meadowcroft Rockshelter) on a map will fulfill Citizenship Standard #2. Mathematics Standard #2 will be met by their calculating the distance between Avella and Pittsburgh. Their identifying the areas of the United States and Canada where the Haudenosaunee were located prior to European contact and then where they are now also will meet Citizenship Standard #2. Citizenship Standard #9 will be fulfilled by the children's learning how biased many Europeans were and have been in their attitudes toward, and treatment of, First Nations people.

Reading, Writing, Speaking, and Listening Standards #3 and #7 and Arts and Humanities Standards #1, #2, and #3 will be met by the students' comparing the folktales presented in the unit with those that they know. Their listening to the folktales coincides with Reading, Writing, Speaking, and Listening Standard #7 and Arts and Humanities Standard #3.

Information Literacy Standard #1 and Reading, Writing, Speaking, and Listening Standard #1 will be fulfilled by the classes' identifying key words to locate information on the six nations of the Confederacy and on the plants used by them. Their using cross references in the print and electronic encyclopedias coincides with Information Literacy Standards #1, #2, #3, and #9 and Reading, Writing, Speaking, and Listening Standards #1 and #2. The pupils' utilizing the Power Library's child-friendly Searchasaurus to find material on the six nations will also fulfill the requirements for Information Literacy #1, #2, #3, and #9.

Environment and Ecology Standards #2, #4, and #5 and Science and Technology Standards #2 and #4 will be met by the children's examining how the flora and fauna were affected by the Beaver Wars and by the competition for hunting grounds.

The classes' acting out the folktales and making masks similar to the False Faces coincides with Arts and Humanities Standard #4. Their analyzing George Catlin's paintings and works by Haudenosaunee artists will fulfill Arts and Humanities Standards #1, #2, and #3.

These objectives and standards are appropriate for third, fourth, and fifth grades in the Pittsburgh Public Schools.

Strategies

To accommodate different learning styles, the material in the unit will be presented in several ways. A video will introduce the unit. Conceptualizing the past is difficult for children, so timelines greatly help to put history into perspective. They aid in separating the more distant past from the more recent. Timelines indicating the last glacier in North America, the various fauna and flora inhabiting the continent during and after the end of the Ice Age, and the history of the nations comprising the Haudenosaunee Confederacy will be used. Maps will help to illustrate the contrast between the territory that belonged to the Haudenosaunee before contact with Europeans and the land that is currently held by them. Timelines will also be utilized to show the migrations of the six nations of the Confederacy. The pupils will examine primary sources including speeches, paintings, and photographs. Classes can read books at their reading levels on archeology and the Haudenosaunee. The art teacher will show the students how to make masks similar to the False Face masks of the Confederacy. She will display examples that I have located of George Catlin's paintings of Haudenosaunee. The children will analyze the paintings according to the elements and principles of art. The science teacher will have the classes work with partners to study how the six nations have used plants for medicine as well as food. They will make mint tea. They will also do rubbings of fossils. The social studies teacher and I will have pupils working in cooperative learning groups to do research, both electronic and in print, on the six nations. She will have the students build a model of a longhouse. I shall bring in some of my First Nations clothes and moccasins made from hides for the children to see and touch. I'll also bring some of the artifacts that I have purchased at powwows. My posters of First Nations people and art will be hanging in the library and in the hallway across from it. I have found that most children respond well to storytelling. This also engages those who have difficulty with, or disdain for, reading. I shall tell Haudenosaunee folktales to the classes and will ask for responses to the oral literature in discussion and in writing. They will be asked to compare these stories with some that they know. The language arts teacher and I will help the pupils act out some of the folktales. I have discovered that the classes become

more interested in authors and illustrators whom I have met and about whom I have shared anecdotes. I have had conversations with a Kahnien'Kehaka illustrator of some of the books in the school library, so I shall pull those books and talk about him, his family, and their museum. The social studies teacher and I will cook Haudenosaunee food for the children. Field trips to Meadowcroft Rockshelter and the Carnegie Museum of Natural History will add sensory experience and help to make the unit have more impact than merely reading or listening.

The history of our people needs to be told. We need to present accurately what happened in the past, so that we can deal with it in the future . . . I don't like what has happened over the last 500 years. We can't do much about that. But what are we going to do about the next 500 years? What are we going to do about the next ten years? (Georges Erasmus, Dene, 1990 in Wright 346)

Classroom Activities

To introduce the unit I'll show part of the video, *Things That Are Still Here*, so that the children can view the Meadowcroft Rockshelter and both see and listen to Dr. Adovasio. They can find on a timeline (Farb 201) various fauna and Paleo-Indian cultures. I'll show them the Fogelman chart of the projectile points as well as photographs of Meadowcroft Rockshelter.

The pupils will locate Avella, Pennsylvania on a map and will use the map scale to calculate how far it is from Pittsburgh. Then we shall take a field trip to Meadowcroft so that they can experience pre-history firsthand. The students will walk into the rockshelter and hear how travelers used it for thousands of years. They will hear how archeologists painstakingly investigated the various layers of rock. They will see the labeling of the layers. While there they will use the atlatl, a device used by Paleo-Indians to hurl an elongated arrow farther and with greater force than by using a bow.

The children will write their impressions of First Nations people. At the end of the unit, they will again write of their impressions and will compare the two.

I'll tell folktales of the Haudenosaunee people and will ask classes to compare one with a story that they already know. They will write their responses. After some of the stories, we'll discuss them orally. They will choose a story or two to dramatize. To select which story or stories to act out, the students will use the Haudenosaunee custom of keeping quiet while one person speaks. I'll let

them use my First Nations talking stick to accomplish this. Only the person holding the feathered stick may speak. All others must remain respectfully silent until the speaker is finished. (Hope springs eternal.) They will then vote, a Haudenosaunee tradition.

The library science curriculum calls for the third graders to learn the parts of the title page and its verso as well as to recognize the table of contents and index. In the fourth and fifth grades, the students examine in greater depth the table of contents and index. They also become familiar with other parts of the book, such as text, half title page, dedication page, foreword, preface, introduction, and appendix. I shall use the books of Haudenosaunee folktales, history, and culture to illustrate these lessons and to provide exposure to the books. Fourth graders are taught how to use encyclopedias, so they will use book and electronic ones to locate information on individual Haudenosaunee nations. The fifth graders learn to use atlases. I'll use atlases and individual maps to show the migrations of the Haudenosaunee and to demonstrate the difference in land holdings before European contact and after.

Watching the video, *Iroquois*, the children will hear from living Haudenosaunee men and women how democracy existed among them before any Europeans came to these shores. They will also hear how their government was built on the concept of peaceful coexistence. The use of plants is discussed as well as the loss of medicinal plants in the takeover of land for the Kinzua Dam along the Allegheny River. The narrators emphasize the significance of the arts and language to maintaining Haudenosaunee culture and the importance of saving the environment. Our children will learn of the Indian boarding schools for children where Whites tried to destroy First Nations culture. I shall show them on the map where Carlisle, Pennsylvania, is, the site of one of the schools. Seeing the children and adults in this film and looking at books depicting contemporary Haudenosaunee will show the pupils that despite population decimation, they still exist today.

The classes will read President Kennedy's letter to President Williams of the Onundawahgah Nation, telling how the Reservation's fertile lands would be flooded to accommodate the new Kinzua Dam. The land was supposed to be left in the Onundawahgah hands, according to the Pickering Treaty with George Washington. This letter can be found in Searchasaurus, a child-friendly database in Pennsylvania Online World of Electronic Resources.

As a culminating activity, the children will display their masks, which they created in art class. They will showcase their longhouse model that they fashioned in social studies. They will present their projects on the Six Nations in written form and in Powerpoint. The social studies teacher, science teacher, art

teacher, and I will cook and serve First Nations food and drink. Haudenosaunee music will be playing in the background. This will be followed by a field trip to the Carnegie Museum of Natural History Alcoa Foundation Hall of American Indians.

“ . . . there are also millions who survive. To ignore their existence and their wishes is to become accessories to murder. They are too many to die” (Wright 345).

Annotated Adult Reference Bibliography/Resources

Books

Adovasio, James M. with Page, Jake. *The First Americans, in Pursuit of Archaeology's Greatest Mystery* New York. Random House, 2002. Book is divided into eleven chapters. Overture sets the stage for archeologist/author's important find at Meadowcroft Rockshelter. Afterword deals with unresolved issue of Kennewick Man. Extensive bibliography. Thorough index. Book is witty and engaging.

Beauchamp, William M. *Iroquois Folk Lore Gathered from the Six Nations of New York* Syracuse. The Dehler Press, 1922. This volume was written for the Onondaga Historical Association. Author is a charter member of the American Folk Lore Society. No table of contents. Index. Folktales with some history.

Caduto, Michael J. and Bruchac, Joseph. *Keepers of Life: Discovering Plants through Native American Stories and Earth Activities for Children* Golden. Fulcrum Publishing, 1994. Illustrated by John Kahionhes Fadden, David Kanietakeron Fadden, Marjorie C. Leggitt, and Carol Wood. Foreword by Marilou Awiaka. Part I is “A Guide for Using and Enjoying This Book,” extensive, well thought out, and useful tips. Part II is “Native American Stories and Plant Activities,” with detailed topics, discussions, and activities accompanying each folktale. The nation and geographic region of the source are provided for each folktale. Stories and activities are divided into “Creation;” “Celebration, Thanksgiving and Stewardship;” “Flowers and Fruits, Seeds and Spores;” “Survival;” and “Healing Our Relations.” Glossary and pronunciation key.

Caduto, Michael J. and Bruchac, Joseph. *Keepers of the Animals: Native American Stories and Wildlife Activities for Children* Golden. Fulcrum Publishing, 1991. Illustrated by John Kahionhes Fadden, David Kanietakeron Fadden, D. D. Tyler, and Carol Wood. Foreword by Vine Deloria, Jr. Part I is the same as in the preceding entry. Part II is "Native American Animal Stories and Wildlife Activities," with the same description as in the preceding entry. Stories and activities are divided into "Creation;" "Celebration;" "Vision;" "Feathers and Fur, Scales and Skin;" and "Survival." Glossary and pronunciation key.

Cauto, Michael J. and Bruchac, Joseph. *Keepers of the Earth: Native American Stories and Environmental Activities for Children* Golden. Fulcrum Publishing, 1988, 1989. Illustrated by John Kahionhes Fadden and Carol Wood. Foreword by N. Scott Momaday. Part I is the same as in the preceding two entries. Part II is "Native American Stories and Environmental Activities," with the same description as in the preceding two entries. Stories and activities are divided into "Creation;" "Fire;" "Earth;" "Wind and Weather;" "Water;" "Sky;" "Seasons;" "Plants and Animals;" "Life, Death, Spirit;" and "Unity of Earth." Glossary and pronunciation key.

Caduto, Michael J. and Bruchac, Joseph. *Keepers of the Night: Native American Stories and Nocturnal Activities for Children* Golden. Fulcrum Publishing, 1994. Illustrated by David Kanietakeron Fadden, Jo Levasseur, and Carol Wood. Foreword by Dr. Merlin D. Tuttle. The first chapter is the same as Part I in the preceding three entries. Chapters two through six are the First Nations American stories and activities with the same description as in the preceding three entries. Glossary and pronunciation key.

Dowd, Gregory. *War under Heaven: Pontiac, the Indian Nations, and the British Empire* Baltimore. The Johns Hopkins University Press, 2002. Book is divided into eight chapters: "Ottawas;" "Delawares and the Colonial World, 1615-1760;" "A Worldly War: An Otherworldly War;" "Besieging Britons, 1763;" "Defending the Villages, 1764;" "Mobs, Germs and the Status of American Indians;" "Uneasy Conclusions;" and "Deaths and Legacies." Extensive notes. Thorough index.

Eckert, Allan W. *The Conquerors, a Narrative* Boston. Little, Brown and Company, 1970. The last in a trilogy, The Winning of America series, this title covers June, 1758 to April, 1769. The first two volumes are *The Frontiersmen* and *Wilderness Empire*. Author's note explains the organization of the book, a daily account, with the date, day of the week, and sometimes the hour indicated before each section. Lack of table of contents hinders the usefulness of this title.

Thorough index. Twelve chapters with an epilogue. List of First Nations people within the book arranged by ethnic group precedes an extensive sources section. Useful maps and diagrams.

Farb, Peter. *Man's Rise to Civilization as Shown by the Indians of North America from Primeval Times to the Coming of the Industrial State* New York. E. P. Dutton & Co., Inc., 1968. Author employs cultural evolutionary theory in exploring family and kinship groups and political and religious institutions of North American First Nations peoples. Book is divided into three parts: "The Evolution of Complexity," "The Long Migration," and "Societies under Stress." Focuses on Great Basin Shoshone, Eskimo, Southern California, Zuni, Iroquois, the Plains, the Northwest Coast, Natchez, Aztec, and Navaho.

Horowitz, David. *The First Frontier: the Indian Wars and America's Origins, 1607-1776* New York. Simon and Schuster, 1978. Book is divided into three parts: "Thanksgiving in New England," "Democracy in Virginia," and "The Cause of Freedom." Within the Selected Bibliography section, and preceding the titles, interesting explanation of how authors write history books and what shaped this one's conception of the past. Index. No credit is given to the Haudenosaunee for influence on shaping Pennsylvania or United States.

Johansen, Bruce E. *Forgotten Founders: Benjamin Franklin, the Iroquois and the Rationale for the American Revolution* Ipswich. Gambit Incorporated, Publishers, 1982. Book is divided into six chapters. Bibliography is divided into five sections. Thorough index of the book and index of names in the bibliography.

Meinig, Donald William. *The Shaping of America, a Geographical Perspective on 500 Years of History Volume I Atlantic America, 1492-1800* New Haven. Yale University Press, 1986. Book is divided into four parts: "Outreach: the Creation of an Atlantic World," "Implantations: the Creation of American Diversity," "Reorganizations: the Creation of an American Matrix," and "Context: the United States circa 1800." Extensive bibliography. Index. No credit is given to the Haudenosaunee for influence on shaping Pennsylvania or United States.

Nester, William R. *"Haughty Conquerors," Amherst and the Great Indian Uprising of 1763* Westport, 2000. A thorough index, introduction, and eight chapters: "Conquest," "Conspiracies," "Attacks," "Counterattacks," "Stalemate," "Subjection," "Settlements," and "Consequences."

Parkman, Francis. *The Conspiracy of Pontiac* New York. Collier Books, 1962. Tenth edition. Revised. Author completed book in 1851. Also wrote the

classic, *The Oregon Trail*. This book is divided into thirty-one chapters. Six appendices contain extracts from primary sources. Although racist and condescending, Parkman does admit the sophistication of the Haudenosaunee political organization. No credit is given to influencing Pennsylvania or the United States.

Peckham, Howard K. *Pontiac and the Indian Uprising* Princeton. Princeton University Press, 1947. Foreword, thorough index, list of maps and illustrations, bibliography divided into primary and secondary sources. Book is divided into twenty-three chapters with subdivisions of each listed in the table of contents.

Pound, Arthur. *Johnson of the Mohawks, a Biography of Sir William Johnson, Irish Immigrant, Mohawk War Chief, American Soldier, Empire Builder* New York. The Macmillan Company, 1930. Forty-two chapters with ten addenda sections. Thorough index. Extensive notes. Maps on end papers. Preface indicates that author spent twenty-five years on Johnson's manuscripts, coping with a fire that destroyed one third of them.

Sokolow, Jayme A. *The Great Encounter, Native Peoples and European Settlers in the Americas, 1492-1800* Armonk. M. E. Sharpe, 2003. Book is divided into eight chapters. Preface acknowledges that the Americas were shaped differently from Europe because of First Nations and their cultures and by the combination of Africans, First Nations, and Europeans. A de facto afterword, "After Columbus: Living in an Age of Missing Information," deals with the unprecedented impact of the European invasion and suggestions for the future. Extensive chapter notes, glossary, and a somewhat difficult index. Very little on the Haudenosaunee and nothing on their influence.

Tebbel, John and Jennison, Keith. *The American Indian Wars* New York. Bonanza Books, 1960. Book is divided into sixteen chapters. Epilogue briefly recounts further wrongs after book's end at Wounded Knee. Bibliographic Notes. Index. Acknowledges the more advanced political organization of Haudenosaunees, but doesn't credit them with influencing Pennsylvania or United States.

Tehanetorens or Fadden, Ray. *Roots of the Iroquois* Summertown. Native Voices, 2000. No index. Book is divided into twenty chapters. Traces early history of Haudenosaunee not found easily elsewhere and ends with the present. Author is a Kahnien'Kehaka elder, a former teacher, storyteller, illustrator, and founder of the Six Nations Indian Museum in Onchiota, New York.

Wright, Ronald D. *Stolen Continents, the Americas through Indian Eyes since 1492* Boston. Houghton Mifflin Company, 1992. Wonderful maps showing

the extent of the five cultures that are the subject of the book: Aztecs, Maya, Incas, Cherokees, and Iroquois. Informative author's note, extensive chapter notes, bibliography, thorough index. Book is divided into three sections, each dealing with the five cultures: Invasion, Resistance, and Rebirth.

Magazines

Smithsonian in Your Classroom. Fall 2004. Smithsonian Institution

Newspapers

Pittsburgh Post-Gazette. May 2, 2005. Page C-3. Lowry, Patricia. "Meadowcroft, Chatham Village Become Landmarks."

Websites

City University of New York and George Mason University.
www.historymatters.gmu.edu/d/5790 Developed by America Social History Project/Center for Media & Learning, City University of New York and the Center for History and New Media, George Mason University.

Edmonton Journal editorial, "The high cost of Oka" 6 May 1991. in
www.kahonwes.com/iroquois/oka.htm Reprint without permission.

Fadden, John Kahionhes and Gray Barbara Kanatiosh. www.iroquois.net
Hosted and made possible by MKL.NET, a service of CUP Industries, Inc. 2001.

Johansen, Bruce E. "Dating the Iroquois Confederacy" in
http://www.ratical.org/many_worlds/6Nations/DatingIC.html Johansen is a professor of Communication and Native American Studies at the University of Nebraska at Omaha. This article was also published in *Akwesasne Notes New Series*, fall—October/November/December—1995, volume 1, #3 and #4, pages 62-63.

New York State Museum. <http://www.nysm.nysed.gov/IroquoisVillage> Scenes from an exhibit. Includes Mohawk Iroquois village, Three Sisters Diorama, Building a Model of a Longhouse, Artifacts.

"Oka Crisis" in *Wikipedia* in www.en.wikipedia.org/wiki/Oka_Crisis Article describing standoff.

Portland State University. <http://www.iroquoisdemocracy.pdx.edu/index.htm>
Four lessons with accompanying activities.

Maps

United States Geological Survey. *Indian Land Areas Judicially, United States* 1978. #101505. 38 “by 52.” Results of cases before the United States Indian Claims Commission or the United States Court of Claims.

United States Geological Survey. *Indian Land Areas, United States* 1983. #101502. Federal reservations, state reservations, federal Indian groups without reservations, Bureau of Indian Affairs offices and areas.

Video Recordings

The First Americans MPH Productions. The History Channel. 1996. 50 minutes. Color. Traces how scientists and others have searched for the origins of First Nations peoples. Includes Meadowcroft Rockshelter and Dr. James M. Adovasio. One grammatical error.

Holzman, Allan, supervising editor. *The Nations of the Northeast* Part of the six-part series, *The Native Americans*. TBS Productions, Inc. 1994. 50 minutes. Color. Shows the tragic consequences of cultural and religious aggression, narrated by First Nations people.

Interviews

Kahionhes or John Fadden, director of Six Nations Indian Museum in Onchiota, New York, illustrator of more than sixty publications, former art teacher in Saranac Central School District, upstate New York, born into Turtle Clan of the Kahniakehake. Telephone interview 23 June 2005 and e-mail conversations 23, 24, 27 June 2005.

Lecture/Slide/Tour

Adovasio, James M. at Meadowcroft Rockshelter 18 June 2005.

Annotated Student Bibliography

Books

Belting, Natalia. *Whirlwind Is a Ghost Dancing* New York. E. P. Dutton and Company, Inc., 1974. Illustrated by Leo and Diane Dillon. A collection of First Nations poetry with the nation indicated for each poem. Colorful paintings accompany every poem in the style of the ethnic group.

Bial, Raymond. *The Iroquois* New York. Marshall Cavendish, 1999. Part of series, *Lifeways*. Book is divided into six chapters. A section following the chapters includes a timeline, notable Haudenosaunee, current locations of the Six Nations, and a glossary. Bibliography provides books, websites, and organizations. Table of contents and index. Timeline shows formation of League later than Mann and Field's date.

Bierhorst, John, editor. *The Naked Bear, Folktales of the Iroquois* New York. William Morrow and Company, 1987. Illustrated by Dirk Zimmer. A collection of sixteen tales with a section of extensive notes referring to parallel stories and folktale motif reference numbers. References section divided into Folktale Sources and Other Works. Table of contents.

Brandenberg, Alik. *Fossils Tell of Long Ago* Boston. Houghton Mifflin, 1972, 1990. Illustrated by author. Easy reading level. No table of contents. No index. Tells how fossils are formed, where they are found, and how they inform us about changed landforms as well as extinct species.

Bruchac, Joseph. *Iroquois Stories: Heroes and Heroines, Monsters, and Magic* Trumansburg. The Crossing Press, 1985. Illustrated by Daniel Burgevin. Table of contents and glossary. "Further Reading" provides books and a newspaper. Introduction is divided into three parts: "Telling the Stories," which is very informative about the types of retellings, how the author came to know these tales, and the stories that are not told to outsiders; "The People of the Longhouse;" and "The Storytellers." Thirty folktales.

Dennis, Yvonne Wakim and Hirschfelder, Arlene. *Children of Native America Today* Watertown. Charlesbridge, 2003. Book is divided into nine geographic regions, including Alaska and Hawaii. A chapter on urban people. Foreword by Buffy Sainte-Marie and Authors' Preface emphasize that First Nations peoples exist, that while they are part of unique cultures they share much in common with non-Natives, and that they have endured violence and hatred in the past. A two-page map indicates where First Nations communities are in the United States

today. Colored photographs. Glossary. Table of contents and index. Resources include books for children and adults, magazines, newspapers, organizations, and web sites. Dennis is mixed-blood Cherokee, who operates a holistic program for First Nations families. Hirschfelder works for the Association on American Indian Affairs and has written a number of publications about First Nations peoples.

Duke, Kate. *Archaeologists Dig for Clues* New York. Harper Collins Publishers, 1997. Part of a series, Let's Read and Find Out Science. Illustrated by author. Lighthearted introduction to how archeologists work, what they seek, and what they do with the results.

Gallant, Jonathan R. *The Tales Fossils Tell* New York. Marshall Cavendish, 2001. Part of series, *The Story of Science*. Illustrated with colored and black and white photographs and diagrams by Jeannine L. Dickey. Eight chapters covering how fossils are formed, how they are dated, and what fossils tell us. Table of contents, glossary, and index. Provides books and web sites for further information. Meadowcroft Rockshelter is not included.

Gallant, Roy A. *Fossils* New York. Marshall Cavendish, 2001. Part of a series, *Kaleidoscope*. Illustrated with colored photographs and colored diagrams by Gysela Pacheco and Jeannine L. Dickey. Seven chapters covering how fossils are formed and what they tell us. Table of contents, glossary, and index. Provides books and web sites for further study. Does not mention Meadowcroft Rockshelter.

Gates, Frieda. *Owl Eyes* New York. Lothrop, Lee & Shepard Books, 1994. Illustrated by Yoshi Miyake. Creation legend from the Kanien'Kehaka.

Jones, Hettie. *Longhouse Winter, Iroquois Transformation Tales* New York. Holt, Rinehart, and Winston, 1972. Illustrated by Nicholas Gaetano. No table of contents or index. Foreword stating that tales were not told in summertime. Three transformation stories of humans who become animals and one folktale of how animals revived a dying hunter.

Koestler-Grack, Rachel A. *The Iroquois: Longhouse Builders* Mankato. Blue Earth Books, 2003. Part of a series, America's First Peoples. Illustrated with colored and black and white photographs and drawings. Eight chapters covering history and present day. Short glossary with pronunciation guide. Resources for further information including books, websites, museums, and cultural centers. Table of contents. Index.

Raskin, Joseph and Edith. *Indian Tales* New York. Random House, 1969. Illustrated by Helen Siegl. Table of contents. First section tells of the formation of the Federation. Ten folktales.

Sneve, Virginia Driving Hawk. *The Iroquois* New York. Holiday House, 1995. Part of a series, A First Americans Book. Illustrated by Ron Himler. Map of the Haudenosaunee Confederacy in colonial New York. No table of contents. Index. Includes creation myth, two poems, history, and present day. Author's note.

Sonneborn, Liz. *The Iroquois* New York. Franklin Watts, 2002. Book is divided into five chapters. Table of contents and index. Also provides timeline, glossary, and further resources including books, organizations, and web sites. "A Note on Sources" tells of author's research. Timeline shows formation of League later than Mann and Field's date.

Squire, Roger. *Wizards and Wampum, Legends of the Iroquois* London. Abelard-Schuman, 1972. Illustrated by Charles Keeping. Introduction alludes to the Haudenosaunees' form of government being used as a model for the United States government. Says that the League was formed in the sixteenth century. Seven folktales.

Taylor, Harriet Peck. *Brother Wolf, a Seneca Tale* New York. Farrar Straus Giroux, 1996. Illustrated by author. An Onundowahgah folktale which explains how the wolf became to be regarded as wise and how the birds got their colors.

Articles

"Mound Builders" in The Columbia Electronic Encyclopedia. 1994, 2000-2005 on Fact Monster.

Websites

Haudenosaunee Children's Page—Iroquois Indian Clothing.
<http://www.tuscaroras.com/graydeer/pages/childrenspage.htm> Iroquois Regalia by Kanatiiosh and printable paper male and female dolls by Kanatiiosh.

Iroquois Museum. <http://www.iroquoismuseum.org/children.html>
Children's Iroquois Museum. Colored photographs and drawings from the museum.

Portland State University.

<http://www.iroquoisdemocracy.pdx.edu/html/iroquoiswoman.htm> Iroquois Woman. Role, social standing.

Reed Farmstead Archeological Site. <http://www.kidsdigreed.com/discovery.asp> Includes Discovery Zone, Games and Puzzles, History, Artifacts Gallery, and Ask Us.

Royal Ontario Museum. www.rom.on.ca/digs/longhouse Homes of the Past: The Archeology of an Iroquois Longhouse. Development by Elise Sherman Abram. Research and script by Dr. Mima Kapches. Three sections: About the Longhouse, Explore the Site: an Activity, and Explore the Village. Ontario Haudenosaunee. Interactive.

Welker, Glenn. www.indians.org/welker/iroqoral.htm Story of Hiawatha, Stories, and Iroquois Constitution.

Maps

Cherokee Publications. *Native American Tribes* 1989. 19 ½" by 15 ½." Jennifer C. Smith. Shows five geographical areas of contiguous United States and Canada.

United States Geological Survey. *Indian Lands in the United States* #101516. 1983. 31" by 44." American Indian reservations, tribal designated statistical areas.

United States Geological Survey. *Indian Tribes Culture Areas* #101013. 1967. 20" by 28." Prepared by William Strutevant of the Smithsonian Institute. Geographical extent of various tribes and their culture areas and eighteen linguistic stocks.

Charts

Fogelman, Gary L. "Chronological Typology Chart for Projectiles/Knives of the Northeast" Fogelman Publishing Company, 1988. One hundred ninety-two projectile points arranged on a timeline from 10,000 B.C. to 1650 A.D.

Video Recordings

Conrad, Kevin, editor. *Things That Are Still Here* A Production of WQED Pittsburgh. 1999. Rick Sebak, producer. Deborah Acklin, executive producer.

Various sites of unusual old places in western Pennsylvania. Includes Meadowcroft Rockshelter.

The Iroquois Part of the ten-part series, *The Indians of North America Video Collection*. Adapted from Chelsea House Publishers' series of books by the same name. Produced and directed by InVision Communications, Inc. Andrew Schlessinger, executive producer. 30 minutes. Grades 4-10.

Appendix Content Standards

Arts and Humanities

1. All students describe the meanings they find in various works from the visual and performing arts and literature on the basis of aesthetic understanding of the art form.
2. All students evaluate and respond critically to works from the visual and performing arts and literature of various individuals and cultures, showing that they understand important features of the works.
3. All students relate various works from the visual and performing arts and literature to the historical and cultural context within which they were created.
4. All students produce, perform, or exhibit their work in the visual arts, music, dance, or theater, and describe the meanings their work has for them.

Citizenship

1. All students demonstrate an understanding of major events, cultures, groups, and individuals in the historical development of Pennsylvania, the United States, and other nations, and describe the patterns of historical development.
2. All students demonstrate understanding of themes and patterns of geography, know the location of major bodies of water, land masses, and nations, and describe the relationships between geography and historical, economic, and cultural development.
9. All students demonstrate an understanding of the history and nature of prejudice and relate their knowledge to current issues facing communities, the United States, and other nations.

Environment and Ecology

2. All students analyze the effects of social systems, behaviors, and technologies on ecological systems and environmental quality.
4. All students evaluate the implications of finite natural resources and the need for conservation, sustainable agricultural development, and stewardship of the environment.
5. All students demonstrate an understanding of the local, national, and international implications of environmental and ecological issues.

Information Literacy

1. The student who is information literate accesses information efficiently and effectively.
2. The student who is information literate evaluates information critically and competently.
3. The student who is information literate uses information accurately and creatively.
5. The student who is an independent learner is information literate and appreciates literature and other creative expressions of information.
9. The student who contributes positively to the learning community and to society is information literate and participates effectively in groups to pursue and generate information.

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Mathematics

2. All students compute, measure, and estimate to solve theoretical and practical problems.

Reading, Writing, Speaking, and Listening

1. All students use effective research and information management skills, including locating primary and secondary sources of information with traditional and emerging library technologies.

2. All students read and use a variety of methods to make sense of various kinds of complex texts.
3. All students respond orally and in writing to information and ideas gained by reading narrative and informational texts and use the information and ideas to make decisions and solve problems.
4. All students write for a variety of purposes, including to narrate, inform, and persuade, in all subject areas.
5. All students analyze and make critical judgments about all forms of communication, separating fact from opinion, recognizing propaganda, stereotypes, and statements of bias, recognizing inconsistencies and judging the validity of evidence.

Science and Technology

2. All students demonstrate knowledge of basic concepts and principles of physical, chemical, biological, and earth sciences.
4. All students explain the relationships among science, technology, and society.