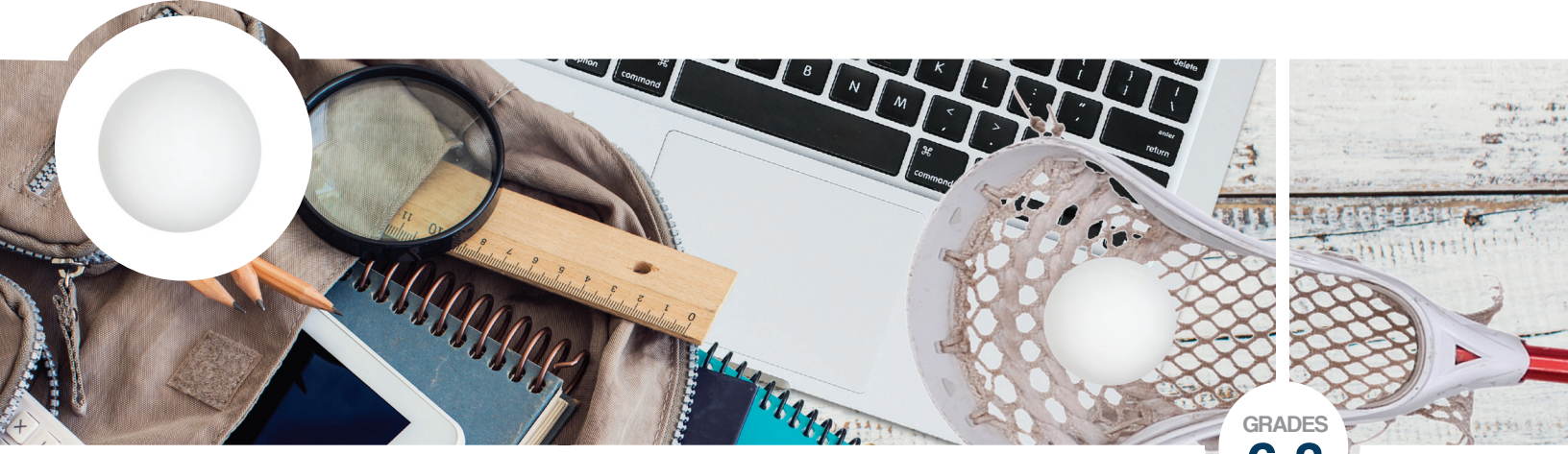


GRADES
6-8

Capstone

Using sports to understand the contribution of Indigenous people to Modern society, including STEM.

Objective: Students will explain the origins of Lacrosse as a model for exploring contributions of Native Americans in STEM. Students will use a simple framework to analyze Indigenous discoveries and concepts in STEM.

Standards

The Nature of Science in the Next Generation Science Standards

Appendix H - Understanding the Scientific Enterprise: The Nature of Science in the Next Generation Science Standards

- Science is a Way of Knowing
- Science is a Human Endeavor

Supplies Provided

Images of Indigenous and Modern Lacrosse

Materials Needed

Pencils, Notebooks, and Internet Access

Engage: Have students participate in a *picture walk*. Hang pictures of Indigenous lacrosse and modern lacrosse throughout the classroom. Have students move about the classroom, individually recording things they notice (observe), things they think (infer), and things they wonder (questions). Have students share out in small groups.

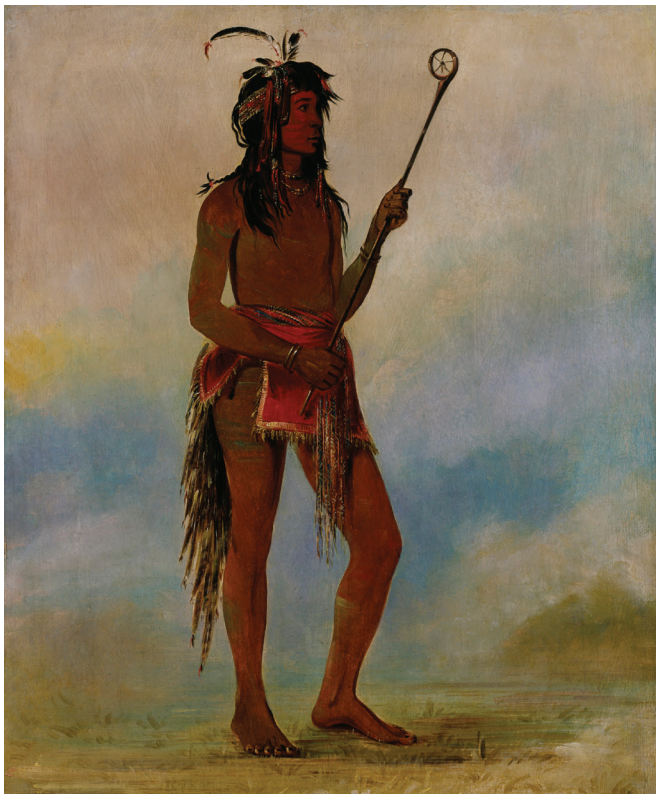
Explore: Have students read the article on pages 78 and 79. Have students discuss or write about the following questions:

- What does Lacrosse look like today?
- What did Lacrosse look like when it was "The Creator's Game?"

Explain: Define the terms Framework and Model, which can be found in the STEM Sports® Glossary in the front of the manual and at STEMSports.com under Resources. Explain that Lacrosse or "The Creator's Game" was one of many ideas taken

Framework for studying Native contributions

What is it today? → **What was it before?** → **How did we change it?** → **How can we honor and identify the contributions?**



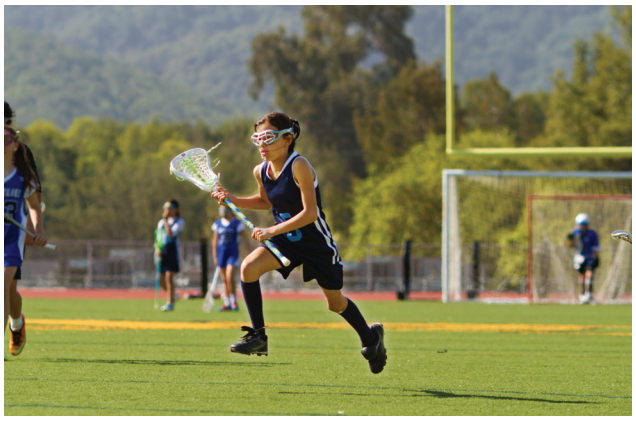
Smithsonian American Art Museum, Gift of Mrs. Joseph Harrison, Jr.

"Ah-nó-je-nahge, He Who Stands on Both Sides, a Distinguished Ball Player" *by George Catlin (1796-1872), oil on canvas, 29 x 24 in. (73.7 x 60.9 cm)*

"[One of] the two most distinguished ball-players in the Sioux tribe . . . [This man] stood to me for their portraits, in the dresses precisely in which they are painted; with their ball-sticks in their hands, and in the attitudes of the play." George Catlin saw Sioux playing lacrosse at Fort Snelling in present-day Minnesota. The Sioux, he reported, played the game in much the same way as the Choctaw, the chief differences being the composition of their "tails," which were made of quills rather than horsehair, and their use of one stick instead of two. (Catlin, Letters and Notes, vol. 2, no. 50, 1841; reprint 1973)

from the Native Americans and used by colonizers. Explain how Lacrosse can be used as a model, a *simplified representation* of Native American contributions in STEM. **Because Lacrosse has a defined set of rules and regulations today with a clear purpose from the past, it is easy to see changes made by the settlers*. Science and recreation each have a history with Native Americans, shaping many common concepts we think about today. Using a simple framework (a structure for analysis or construction), explain how lacrosse as a model can help us understand Native American contributions to science.

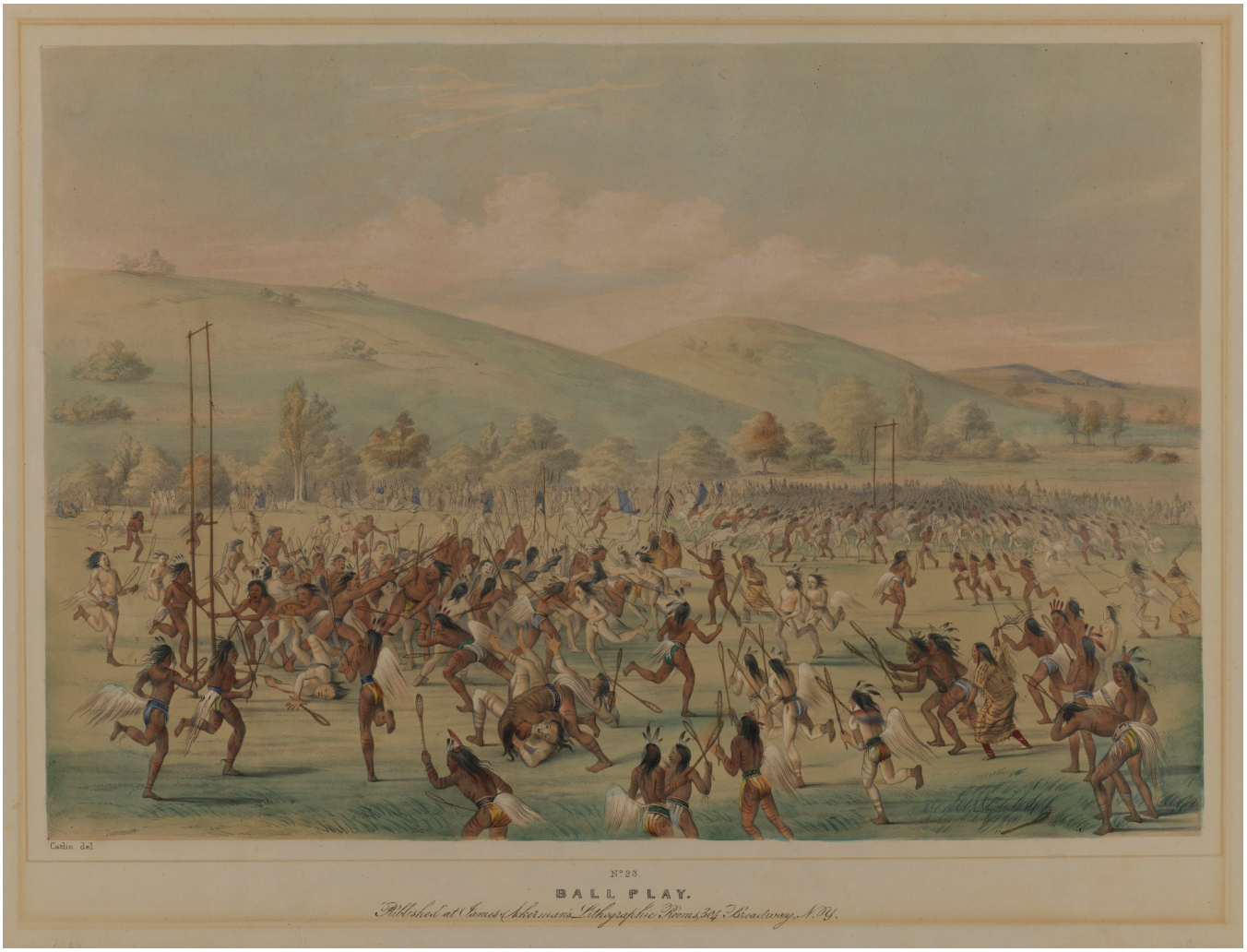
Elaborate: Have students use the framework to analyze the sport of Lacrosse. Identify the first wo questions in the framework students discussed and/or wrote about in the *Explore* section.



Evaluate: Have students select an area in STEM that Native Americans have contributed to learn about the contributions using the framework for studying Indigenous contributions. Have students create a poster, slideshow, or video to present their finding .

- Astronomy
  - Medicine Wheel
  - Constellation
  - Tracking Venus
- Agriculture
  - Domestication of plants
  - Selective breeding
  - Raised garden beds
- Medicine
  - Syringes
  - Pain Relievers
- Mathematics
  - Base 20 system
  - Quipu
  - Calendrical notations
- Ecology
  - Fire Management
  - Irrigation
  - Wildlife management

Extend: Students could present their research in small groups, refle ting on their findings using the peer feedback form on page 80.

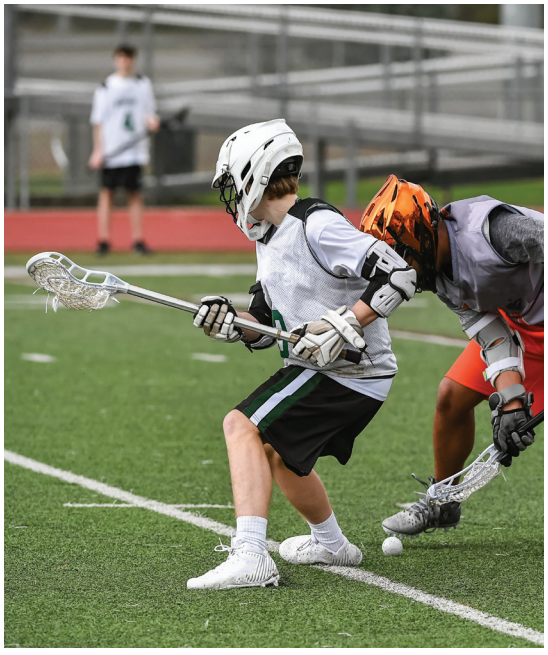


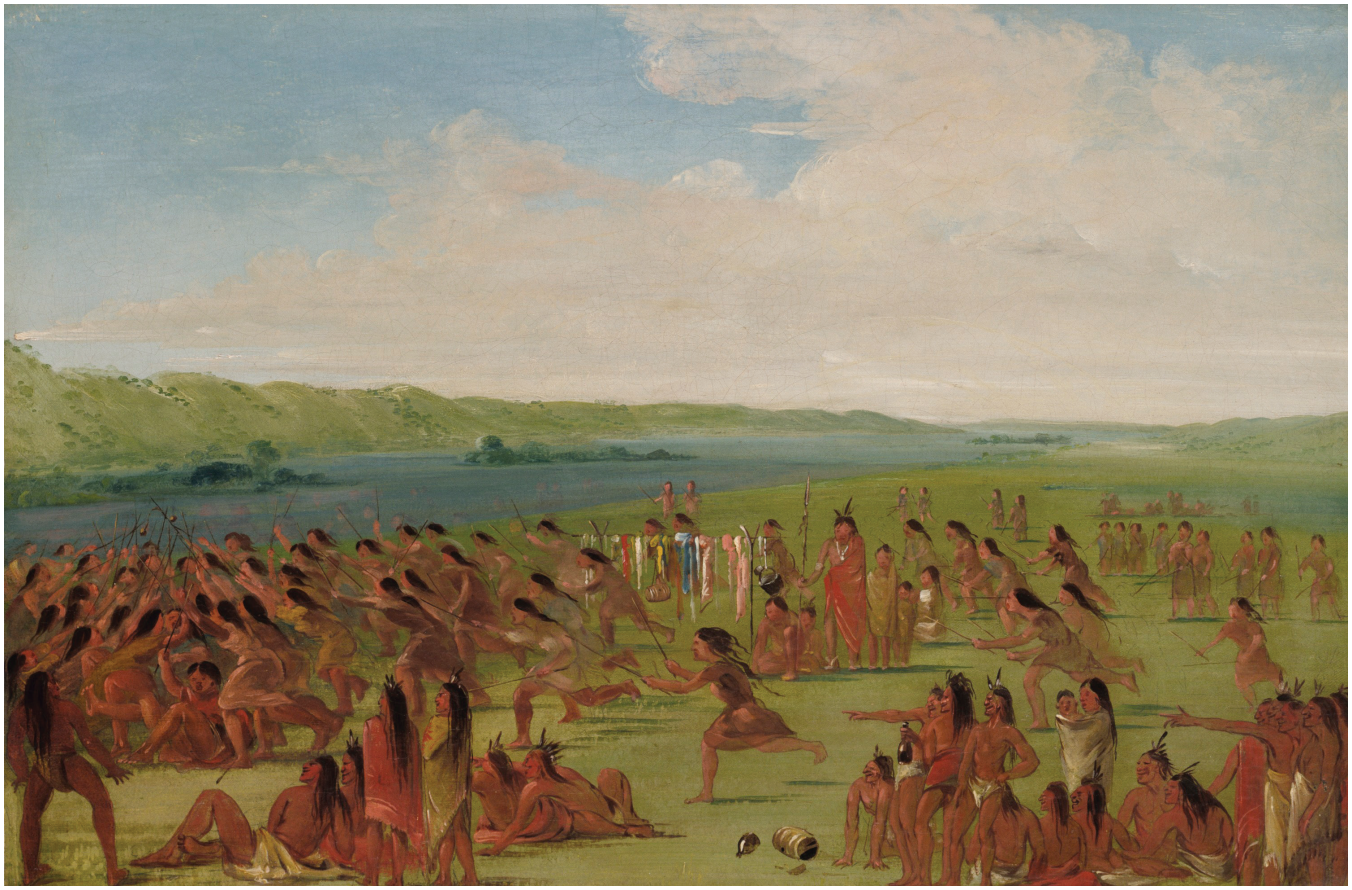
Smithsonian American Art Museum, Gift of Mrs. Joseph Harrison, Jr.

"Ball Play (La Crosse)" *by George Catlin (1796-1872), lithograph, 2 3/4 x 17 3/4 in. (32.4 x 45.1 cm)*

Smithsonian Institution Archives,
Record Unit 371, Box 02, Folder: June 1976, Image No. 75-8733-34

"1975 Festival of American Folklife - Lacrosse Game" *by James Pickerell, Black-and-white photographs*

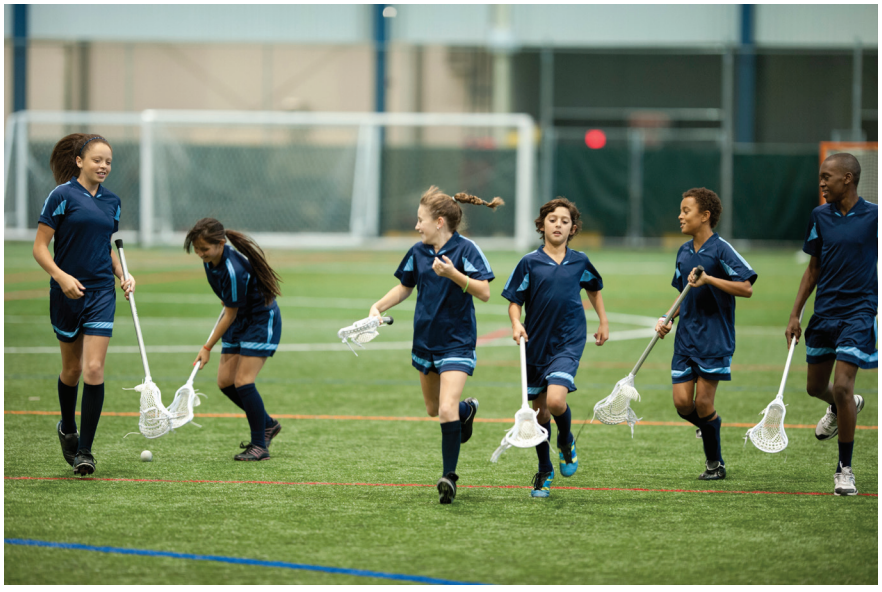


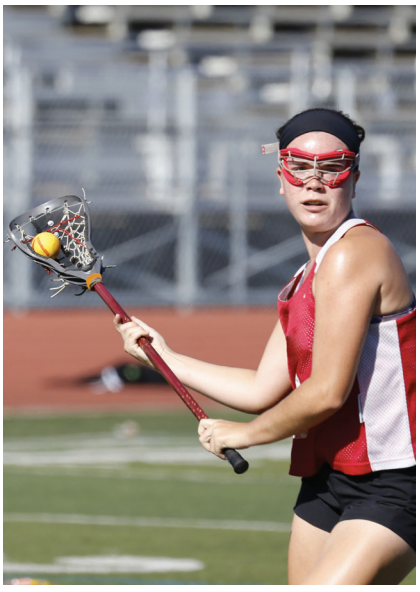


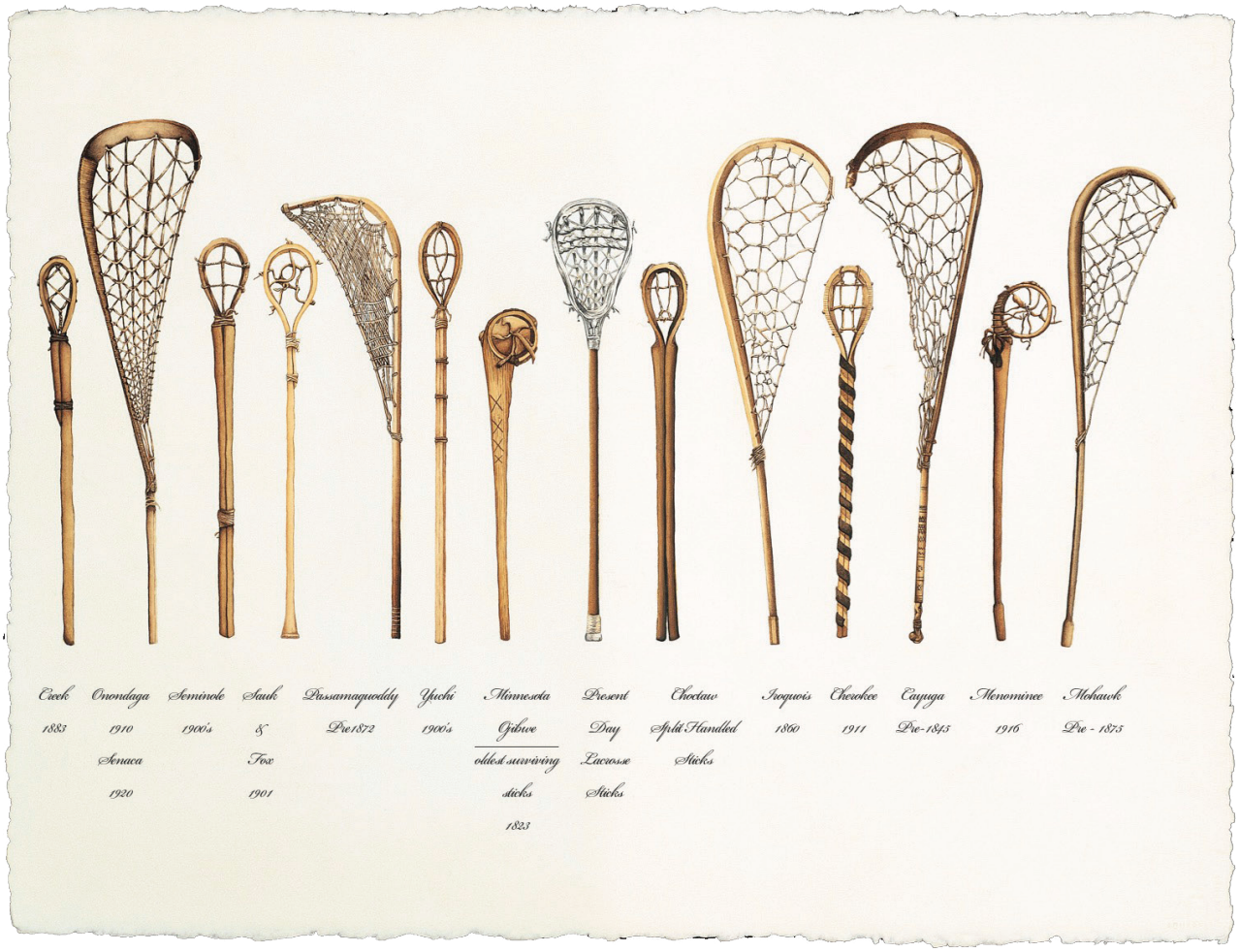
Smithsonian American Art Museum, Gift of Mrs. Joseph Harrison, Jr.

"Ball-play of the Women, Prairie du Chien" *by George Catlin (1796-1872), oil on canvas, 19 5⁄8 x 27 1⁄2 in. (49.7 x 70.0 cm)*

George Catlin witnessed Choctaw lacrosse in Indian Territory in 1834, but a year later, at Prairie du Chien in today's Wisconsin, Catlin saw and recorded the Eastern Sioux/Dakota version of ball-play. He later described the game: "In the ball-play of the women, they have two balls attached to the ends of a string, about a foot and a half long; and each woman has a short stick in each hand, on which she catches the string with the two balls, and throws them, endeavoring to force them over the goal of her own party." (Catlin, Letters and Notes, vol. 2, no. 52, 1841, reprint 1973; Truettner, The Natural Man Observed, 1979)







"American Indian Stickball Collection" by Brian Larney
Artist: yahvlane
Seminole-Choctaw

Lacrosse: Yesterday vs. Today

Lacrosse has significa t roots and is most popular in the Northeast and Midwest of the United States. To the indigenous tribes surrounding the Great Lakes, lacrosse or as it was originally called, "The Creator's Game," was a way of life. It was and is part of the spiritual, physical, and social aspects of the tribes. Many tribes participated in the game, including the Iroquois (Six Nations), many of the Algonquian people, and the fi e tribes of Oklahoma — Cherokee, Chickasaw, Choctaw, Creek, and Seminole.

Prior to white settlers, the game looked very different than today for Native Americans: purpose, ritual, and the physical components. The purpose of lacrosse was for the creator, which is where the name "Creator's Game" derived. It was played to please the creator in ceremonies during important times, such as the hunt and spring bloom. It was also used in intertribal relations to solve confli t or to celebrate. The game during this time was not played for personal gain.

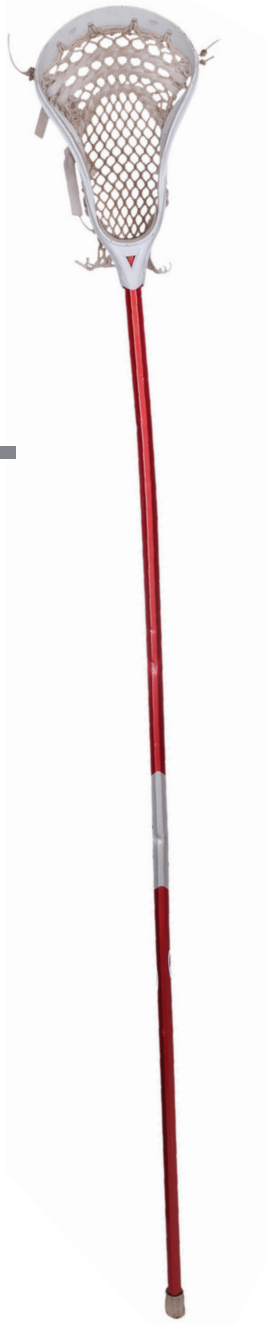
Modern lacrosse has colonized the game for

Lacrosse was played to please the creator in ceremonies during important times, such as the hunt and spring bloom. It was also used in intertribal relations to solve conflict or to celebrate.

purposes of team building, competition, fitnes , and fun. Likewise, we see much personal gain by way of entertainment and competition to generate a high volume of fans at the collegiate and professional levels.

The purpose has changed drastically, as has the tangible, more physical aspects of the game. First, the field is di erent. It was not confined o 110 x 60 yards. The field was vast, sometimes up to two miles with no boundaries. Often the field included forested areas and other natural features. Goals may have been boulders and trees — a bit similar to modern lacrosse that uses a man-made net. Second, the equipment was different. Like many historic sports, safety equipment was not used. Therefore, no helmets, pads, or eye protection. The stick and ball also looked different. In fact, it was the cross-like 'net' that inspired the name Lacrosse from French settlers because it looked like a cross. The image above shows different sticks engineered by different tribes. Today's lacrosse stick was evolved from these early iterations. The ball was made of natural materials, such as animal hide and hair, wood, or rubber. Today, the ball is made of synthetic-like silicon or latex.

Finally, there were few rules in the original game. The play time varied, and could go from sunrise to sunset. Whereas today, the play time is specific and intervaled. There was also not a specified number of players on a team, and positions, as we know and recognize in modern lacrosse, did not exist. Consequently, it was difficult o maintain positions on a two mile field of pl y. Lack of positions created a much different game, and there was not the same emphasis on coordinated teamwork as today.



When settlers began to play, they focused more on entertainment and recreation, as opposed to spiritual and social engagement. Today's game is much more technical, consisting of rules and equipment to ensure control. However, it is important to recognize the origin and creators of lacrosse: Native Americans. Is it time to incorporate some of the original purpose to honor the contribution and inventor of "The Creator's Game?"

Sources:

https://globalsportmatters.com/culture/2018/11/15/creators-game-moving-from-native-american-favorite-prime-time/

https://worldlacrosse.sport/about-world-lacrosse/origin-history/

https://nativeamericatoday.com/lacrosse-rooted-in-tribal-tradition/

Name: _____ Class: _____

Capstone

GRADES 6-8

Peer Feedback Form

Presenter name: answer here

STEM area: answer here

Summary of the modern STEM area:

answer here

What did the presenter explain as the Native American's ideas in the modern STEM area?

answer here

What is one way the presenter said scientists, engineers, and other STEM professionals can honor and/or identify that their work is based on Native American contributions?

answer here