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Maple Sugaring Among the Delaware

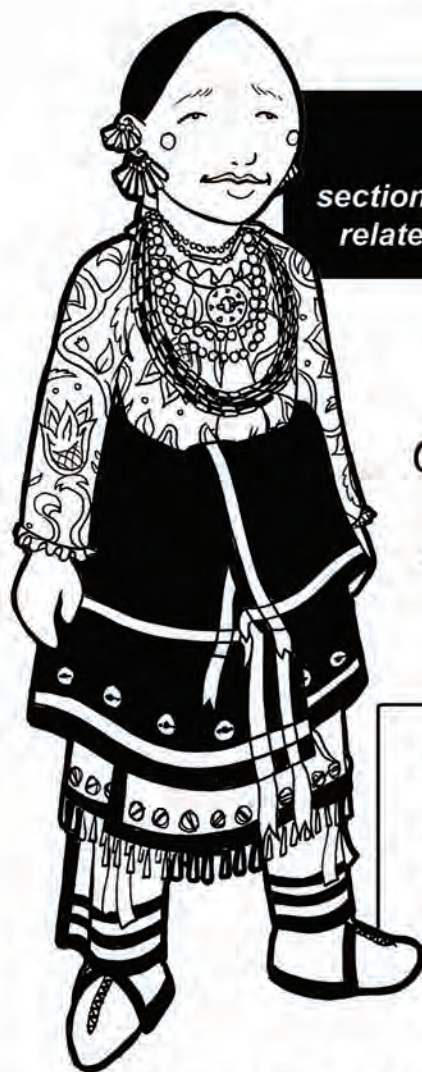
An Illustrated Reading Highlighting the Native Tradition of Sugar-Making

Maple Sugaring Among the Delaware

Context of Illustrations and Time Period of Story

This educational story focuses on the Delaware tradition of maple sugaring during the later half of the 18th century. The illustrations depict common Delaware material culture - tools, utensils, housing, clothing and appearance - from 1750 to 1800. This story highlights a cultural tradition in historical context.

More than an illustrated reading, *Maple Sugaring Among the Delaware* includes extras for children and students to look-up, discuss or solve...



Did You Know...
sections highlight cultural history and plant science related to Delaware traditions and maple sugaring.

Q & A's focus on terminology and maple tree biology. These questions can be answered with simple online searches.

Sugarbush Math

asks young readers to use their calculation skills in practical maple sugaring applications.

Some words in the text are underlined.

Take the time to look up and define these words with your children or students as they encounter them in the reading.



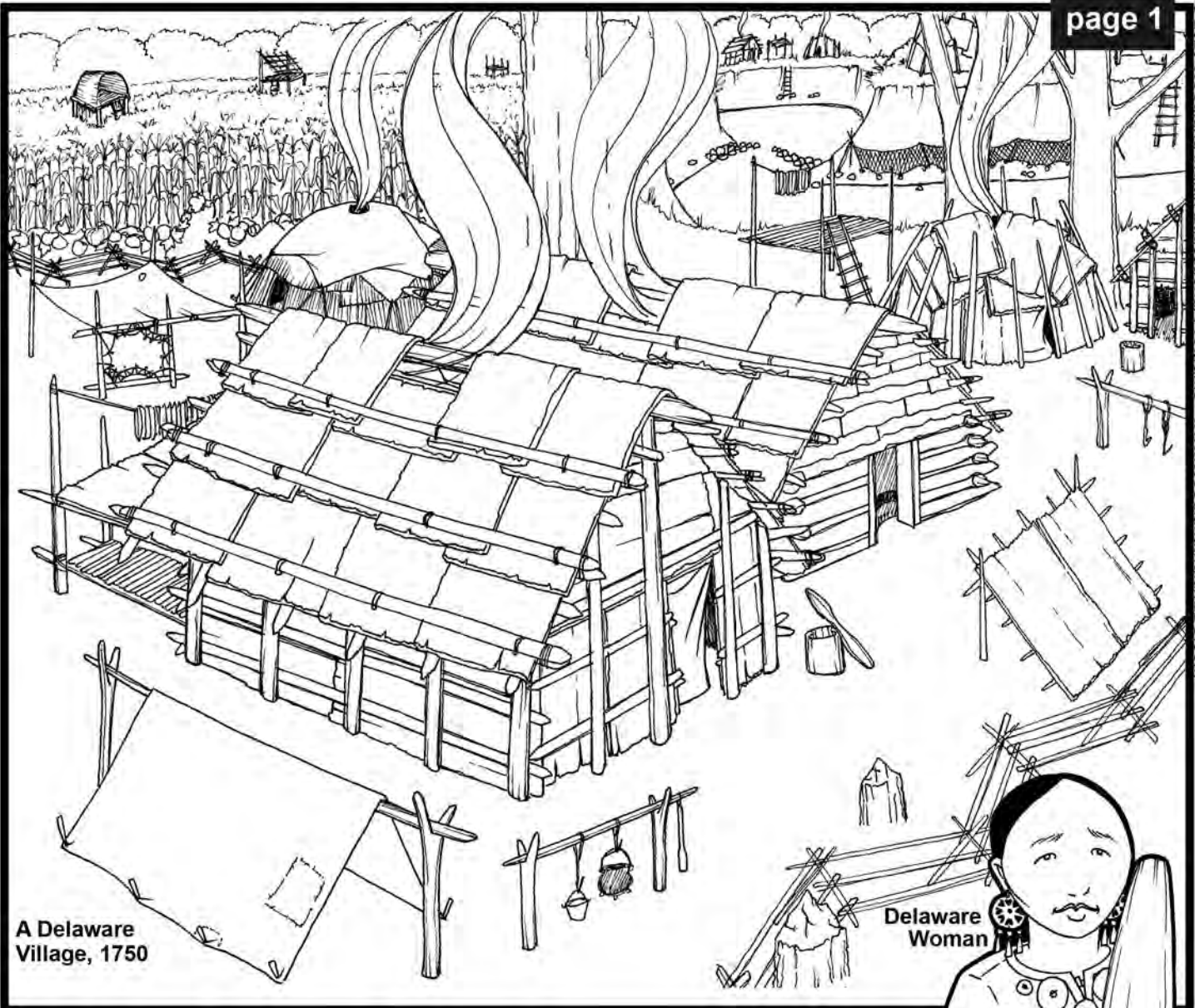
Two Delaware girls dressed in their finest, 1750.

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The Lenape People Called *The Delaware* (1750 - 1800)

The Delaware People are native to what is now eastern Pennsylvania, northern Delaware, southern New York, and all of New Jersey. They were first called *Delaware* after the English named a large river in their homelands the "Delaware River," however the Delaware People call themselves *Lenape* (or Lenni-Lenape, or Luunape) in their own language.

Q: What does the name LENAPE translate as?

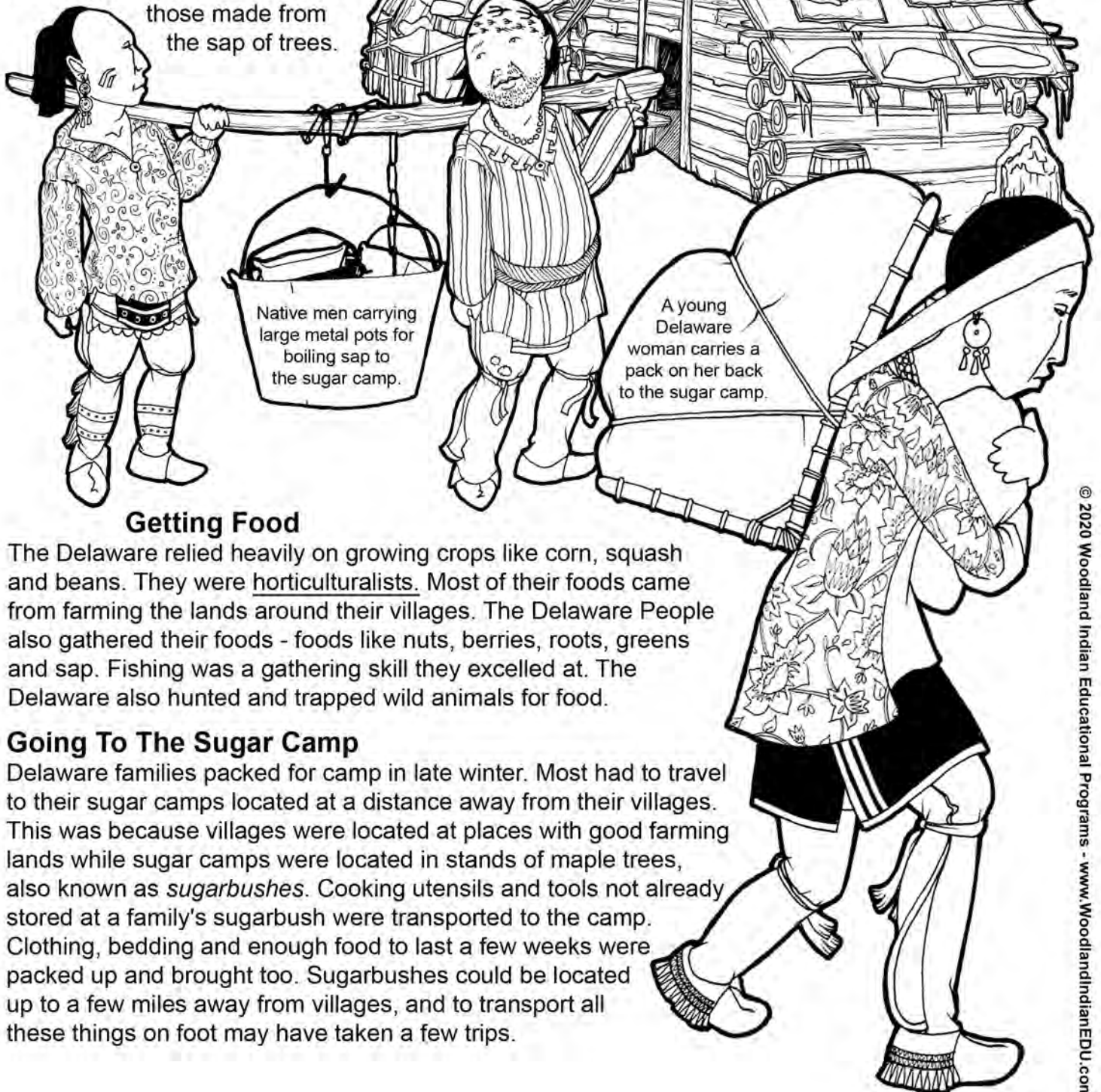
A: _____

In the 1600's the Dutch, Swedish and English arrived in North America on the shores of Delaware homelands. By 1700, the Delaware were being crowded by Anglo settlers in the East. Delaware families moved westward to find more suitable living conditions away from European foreigners, many of whom were very hostile to Native Americans. By the later 1700's most Delaware people were living in western Pennsylvania, Ohio, and New York. A few went north to Canada, and some had already moved as far west as Indiana and Wisconsin.



The Delaware Diet in 1750

By 1750 the diet of the Delaware People had changed very little since first European contact. Settlers had brought some different foods from Europe to North America, and some, like the Moravian missionaries, even tried to change what Native persons ate and how they got their food. Still most Delaware communities relied on traditional foods like cultivated corn, meat from wild animals, and gathered foods like those made from the sap of trees.



Getting Food

The Delaware relied heavily on growing crops like corn, squash and beans. They were horticulturalists. Most of their foods came from farming the lands around their villages. The Delaware People also gathered their foods - foods like nuts, berries, roots, greens and sap. Fishing was a gathering skill they excelled at. The Delaware also hunted and trapped wild animals for food.

Going To The Sugar Camp

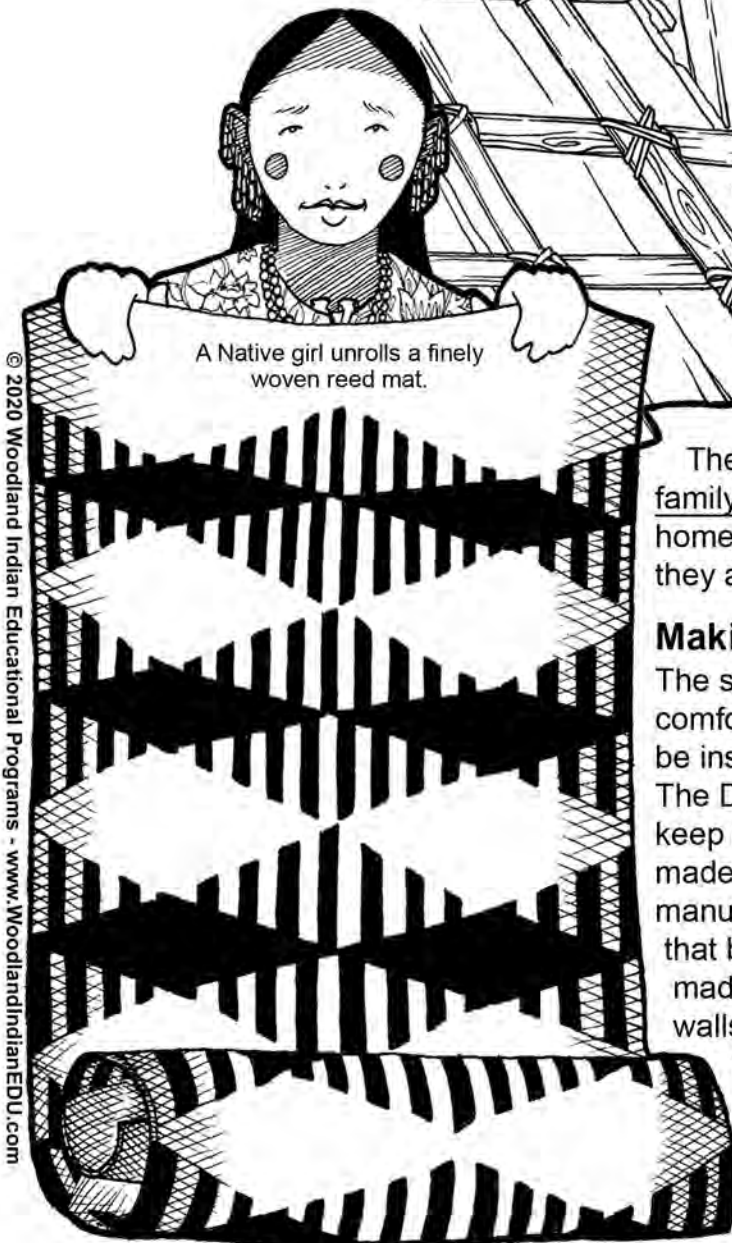
Delaware families packed for camp in late winter. Most had to travel to their sugar camps located at a distance away from their villages. This was because villages were located at places with good farming lands while sugar camps were located in stands of maple trees, also known as *sugarbushes*. Cooking utensils and tools not already stored at a family's sugarbush were transported to the camp. Clothing, bedding and enough food to last a few weeks were packed up and brought too. Sugarbushes could be located up to a few miles away from villages, and to transport all these things on foot may have taken a few trips.

Setting Up Camp

Having arrived at the sugarbush, family members started setting up camp. They covered house frames and repaired structures that were previously occupied. Because Native families often returned to the same sugarbush year after year, the structures were used again and again. New structures were built when needed.



A Delaware husband and wife work together to repair a structure in camp.



A Native girl unrolls a finely woven reed mat.

There may only be one small home for a nuclear family or two to bunk in, or there could be a few homes for a large extended family to live in while they all work together at the same sugarbush.

Making Camp Comfortable

The structures people slept in needed to be made comfortable. It was wintertime so the homes had to be insulated to keep family members warm inside. The Delaware used three types of house coverings to keep the weather out: 1. sheets of tree bark, 2. mats made of reeds, and 3. canvas cloth of European manufacture. Of the three, it was the reed mats that best insulated the homes against the cold. Mats made of flexible reeds were layered on the home's walls, keeping the cold out and heat in. The heat in the home was generated by a small fire.

Q. What is a Lenape word for "house"?

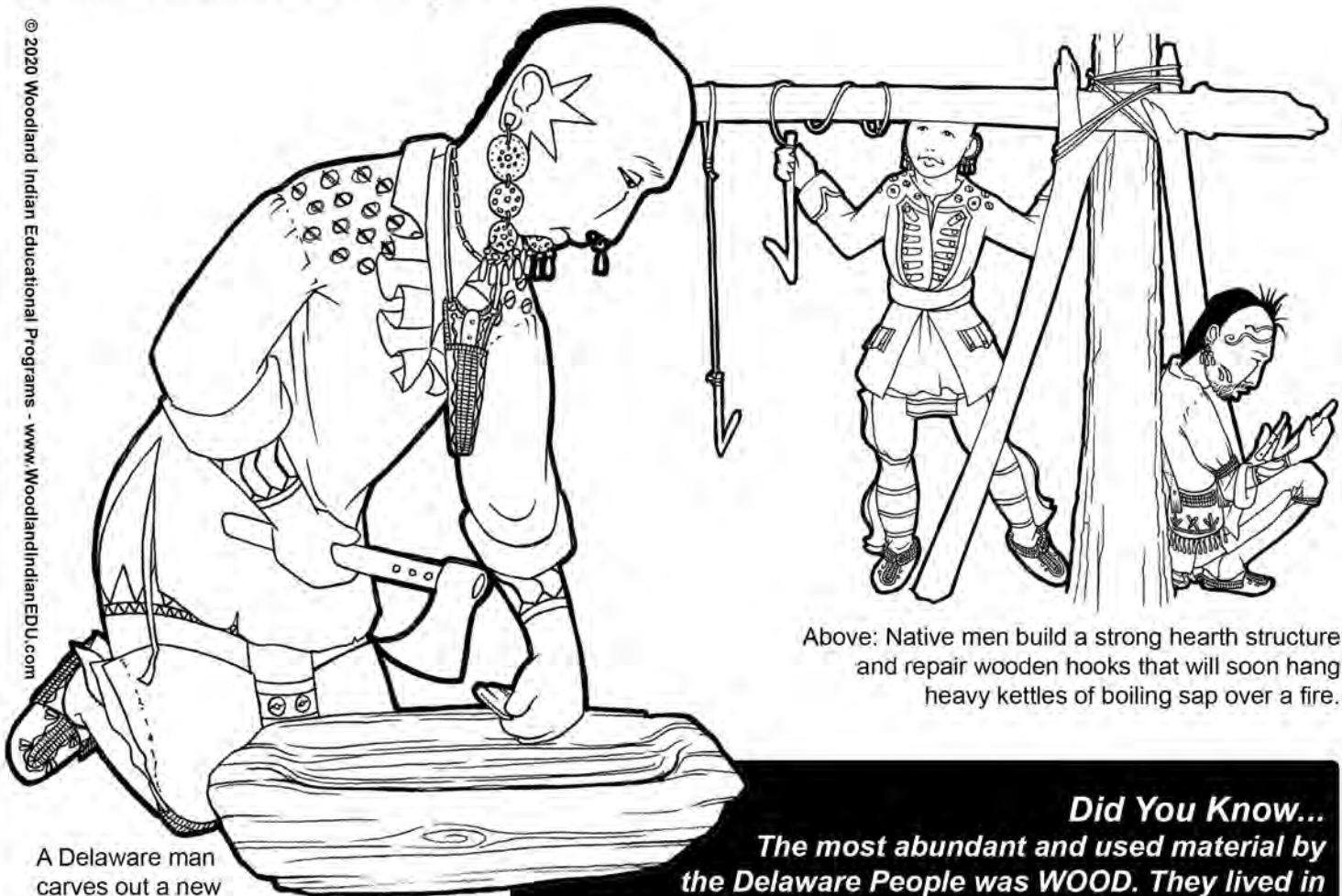
A. _____

Before the first tree was tapped, all the sugaring equipment and tools had to be unpacked. Many of the tools and utensils were previously stored at the sugar camp. For example, sap catching pails were specialized utensils only needed in the sugaring season, so if a Delaware woman owned 100 sap catching vessels, she could just store them at the sugar camp rather than transporting them to and from her village. They were carefully stored below ground in lined pits, or packed away in small storage structures. Any utensils that did not have use outside of the sugar camp, like large wooden troughs and barrels used for holding sap, could all be stored in camp.

Other items that were used year-round like metal pots, hatchets, stirring paddles, pot hooks and more, were brought to camp and unpacked. With everything accounted for, any utensil that needed repair or replaced was tended to. Kettles were scrubbed, pot hangers were repaired and bark buckets were mended.

Collecting Firewood

Gathering firewood was of the utmost importance. So much wood was necessary to keep the sap hot and boiling all day and night. A person could be fully occupied in just this one task for the whole sugar season. Delaware women were in charge of the cooking fires. They mainly collected branches and limbs that fell from trees to the forest floor. Children too gathered firewood to help their mothers and aunts, and Native men dragged in the large heavy limbs. Ladies used their hatchets to break up branches and limbs into smaller pieces.



Above: Native men build a strong hearth structure and repair wooden hooks that will soon hang heavy kettles of boiling sap over a fire.

A Delaware man carves out a new sugar trough.

Did You Know...
The most abundant and used material by the Delaware People was WOOD. They lived in Eastern North America surrounded by forests. From trees came canoes, bowls, spoons, tools, toys, musical instruments, containers, cordage, textiles, homes and fuel!

Tapping Maple Trees

The trees were tapped when the sap started to flow. This was done by slashing into the bark of the tree with hatchets. Each gash had to be deep enough to get through the bark layers. Slash marks were cut in diagonal lines, often in Y and V shapes. The sap would leak out of each cut tap, down to where a spile was placed.

Spiles were made of a carved flat stick or a piece of bark. They were stuck or wedged into the trees at the bottom of the gashes. The spiles would become soaked in sap, leading the sap away from the tree then dripping and falling into sap catching pails placed below. Sap pails or buckets were carved of wood or made of folded bark.

Q. What causes the natural pressure that pushes sap out of tapped Maple trees?

(HINT: carbon dioxide is involved)

A. _____

A Native man taps trees while a woman places bark sap pails below each new tap.



Sap From Trees

It was the weather of late winter that signaled sap to move within the Maple trees. With every freezing night and thawing day, the sap flowed generously from the taps. Each tap had the potential to give over one gallon of sap a day.

Maple sap straight from the tree is clear and mostly tasteless, like water. In fact maple sap is mostly water.

Did You Know...

Maple sap contains nutrients like calcium, potassium, zinc, manganese, magnesium, riboflavin and amino acids. However it's mostly water at over 90%, and contains only about 2-5% sugar.



Collecting Sap

Native American sugarbushes could have up to 200 trees tapped, though most families tapped fewer. How many trees were tapped depended on the number of maple trees in a sugarbush, the number of persons working in a sugarbush, and how much maple sugar was desired.

Larger trees could be tapped more than once, and each tap could produce a gallon of sap on a good day. Sap was collected every day. This means that if a sugarbush had 100 taps that produced well, about 100 gallons of sap needed to be collected in a single day's time. And collecting sap was all done by hand and on foot.

Most family members had a role in collecting sap. If old enough, children could check the taps and transport small buckets of sap back to camp. Smaller sap pails were emptied into larger carrying buckets. The larger the bucket, the heavier they were filled with sap. Older youth and able-bodied adults carried larger buckets of sap back to camp. Buckets were carried by hand or sometimes with the aid of European-style yokes. Some Delaware persons may have even used toboggans to help transport sap back to camp, just like their Native neighbors to the north did.



A Delaware family (mother, father and daughter), collect maple sap in large metal, wood, bark and canvas buckets.

Sugarbush Math

A sugarbush has 84 tapped trees, of which 12 had two taps. If each tap gave $\frac{1}{2}$ gallon of sap a day on average, how much sap was collected in 4 weeks?

Freezing the Water Out of Sap

The sap collected was poured into large basins and barrels in camp. There it would wait until pot space became available over the fire. If the weather was rather cool, the sap could wait for a few days without going bad. Frosty nights froze the top layer of the sap. This ice layer was made of mostly water and was simply discarded, which helped condense the sugar in the sap. In fact leaving sap out for a few light freeze cycles was done on purpose.



A Native girl pours sap into a barrel.

A Delaware woman brings firewood back to camp (left) while her sister pounds corn into meal using a log mortar and pestle (below).



...And More Firewood

As some family members ventured into the sugarbush for sap, others ventured into the forest for more firewood. Collecting firewood was a never ending task when sugar-making required hot cooking fires to run almost all day and night.

Other Daily Chores

Not all work at camp had to do with sugar-making. Everyday work still had to be accomplished. Food had to be secured and prepared, meals cooked, drinking water collected, utensils washed, clothes and moccasins mended, tools repaired and more. Adults cleaned themselves, children washed daily, and babies were changed and bundled.

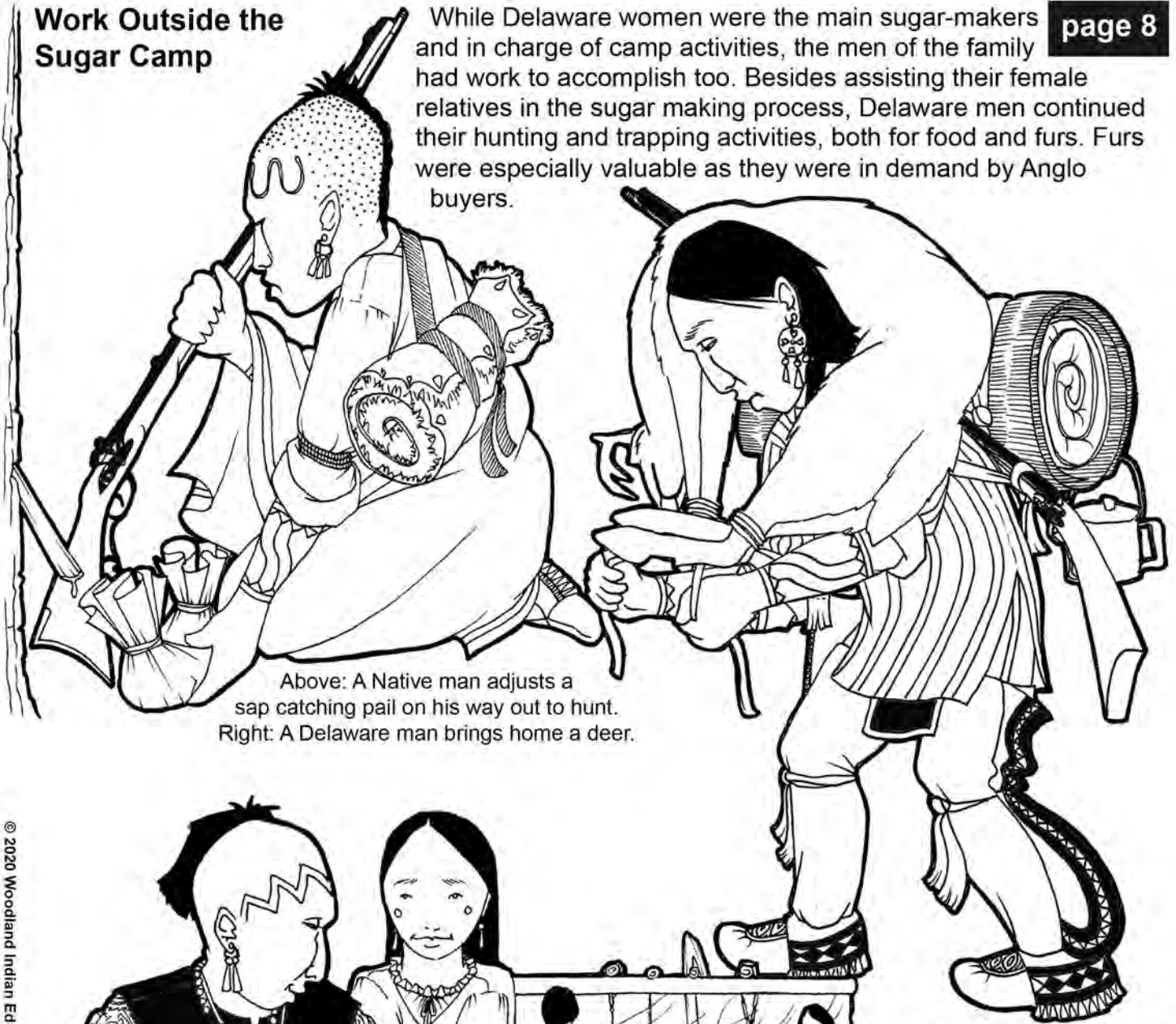
With all the work that had to be done it's easy to understand why the Delaware People lived with, and relied on, their extended families. Work was accomplished in good company. Relatives worked every day together. Family members would sing, joke, laugh and tell stories all while they cooked, washed, chopped, carved, fixed and mended.



Work Outside the Sugar Camp

page 8

While Delaware women were the main sugar-makers and in charge of camp activities, the men of the family had work to accomplish too. Besides assisting their female relatives in the sugar making process, Delaware men continued their hunting and trapping activities, both for food and furs. Furs were especially valuable as they were in demand by Anglo buyers.



Above: A Native man adjusts a sap catching pail on his way out to hunt.
Right: A Delaware man brings home a deer.



Left: An uncle entertains his niece with a story while cleaning his musket, freeing up his sisters to give their full attention to sugar making for a while. Nothing was more important to a Delaware man than his family.

Did You Know...
The Delaware People were matrilineal. Clan membership was passed

from mother to child, and Delaware extended families organized around related women. This means that brothers played an important role in the upbringing of their sisters' children. He was a father figure to his nieces and nephews.

Processing The Sap

Pots made of copper, brass, and iron were filled with tree sap and hung over the fire. The sap boiled, evaporating the water content of the sap. Sap then condensed to syrup. When cooked further to a high temperature, it became maple sugar. This process took many, many hours. Day and night the sap was heated over fire. Family members took turns watching the pots, making sure the sap was hot enough, the syrup didn't boil over, and the sugar didn't burn. Women in charge of sugar-making kept the fires hot with a constant supply of wood.

Sugarbush Math

It takes about 40 gallons of sap to make 1 gallon of syrup.

Write this as a ratio.

Using the amount of sap collected in your answer on page 6, how many full gallons of syrup could be made?

A Native woman tends to her pots filled with sap over the fire.

Did You Know...

Before Europeans came to North America, the Delaware People cooked in earthenware pots. They made these vessels from clay mixed with ground shell, stone, or sand. Clay pots were filled with corn porridges, squash puddings, hominy, greens, venison stews, berry drinks, teas and other foods, then placed over a fire to cook. By 1750 the Delaware had adopted Anglo-made metal pots acquired in trade. Like the pottery they made previously, they cooked all their foods in copper, brass, and iron kettles.

A Delaware mother, with her daughter and son-in-law, browse through trade goods laid out on a blanket.



Why Dry Maple Sugar?

Maple syrup was made and used historically, but dry maple sugar was preferred in the 1700's. Dry sugar was easier to pack and store. It would also keep longer as there was little water content to aid in spoiling it.

Check the sugar to see if it's ready to be processed into dry sugar.

Pour hot sugar into a cool wooden trough.

Paddle hot sugar while it cools until it granulates.

Making Sugar

To make dry sugar, sap was evaporated to syrup and cooked again to make sugar. When the hot liquid sugar reached about 255 degrees, it was removed from the fire and cooled to make dry sugar. Native sugar-makers didn't have thermometers to check the temperature of the hot sugar back then, and they didn't need them. Delaware women knew when the sugar was hot enough just by how it looked. The sugar was ready when it had a foamy appearance and dried hard while being slowly dripped from a spoon.

To make granulated sugar the hot liquid sugar was paddled or stirred while it cooled.

To make candied sugar the hot liquid sugar was poured into wooden molds and left to dry.

There they hardened into sugar cakes.

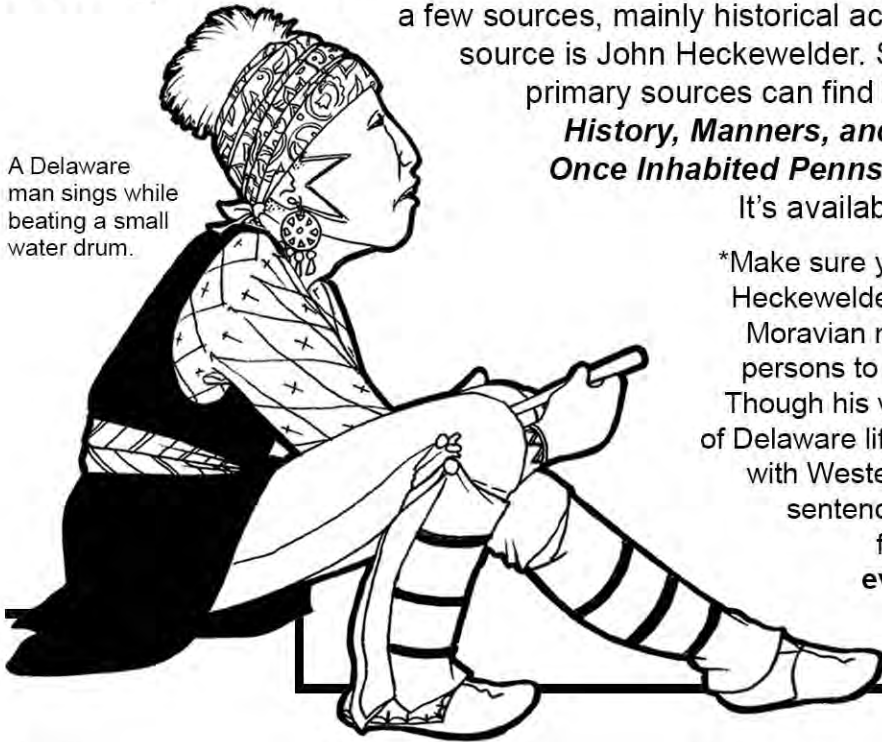
Pack away the sugar cakes for later use.

Pour hot sugar into greased molds.

Maple Sugaring Among the Delaware Post-Reading Materials

Primary Sources: Information highlighted in *Maple Sugaring Among the Delaware* comes from a few sources, mainly historical accounts and ethnographical reports. One source is John Heckewelder. Students whose lessons require reading primary sources can find his historical accounts in the publication ***History, Manners, and Customs of the Indian Nations Who Once Inhabited Pennsylvania and the Neighbouring States***. It's available to read in its entirety online, for free.*

A Delaware man sings while beating a small water drum.



*Make sure your students/children understand that John Heckewelder wasn't a Native person...he was an Anglo Moravian missionary tasked with converting Delaware persons to his Christian faith and Western worldviews. Though his writings are invaluable to our understanding of Delaware lifeways during this time and place, he writes with Western bias and agenda. This means that every sentence he writes must be scrutinized. Simply put for young readers: **The author didn't know everything about the cultures he wrote of, and his personal feelings, opinions and assumptions are not facts.**

"...THEY GO TO THEIR SUGAR CAMPS,... THE MEN HAVING BUILT OR REPAIRED THEIR TEMPORARY CABIN, AND MADE ALL THE TROUGHS..., THE WOMEN COMMENCE MAKING SUGAR, WHILE THE MEN ARE LOOKING OUT FOR MEAT, AT THIS TIME GENERALLY FAT BEARS... WHEN AT HOME, THEY WILL OCCASIONALLY ASSIST THEIR WIVES IN GATHERING THE SAP, AND WATCH THE KETTLES IN THEIR ABSENCE, THAT THE SYRUP MAY NOT BOIL OVER." -JOHN HECKEWELDER

An expectant mother, this Delaware lady sits down to rest and listen to the man's singing.



Post-Reading Worksheets Included in this Packet:

- **Forced Migration, Removals & Displacement**
(online searches can help children answer the questions)
- **The Delaware Clan System**

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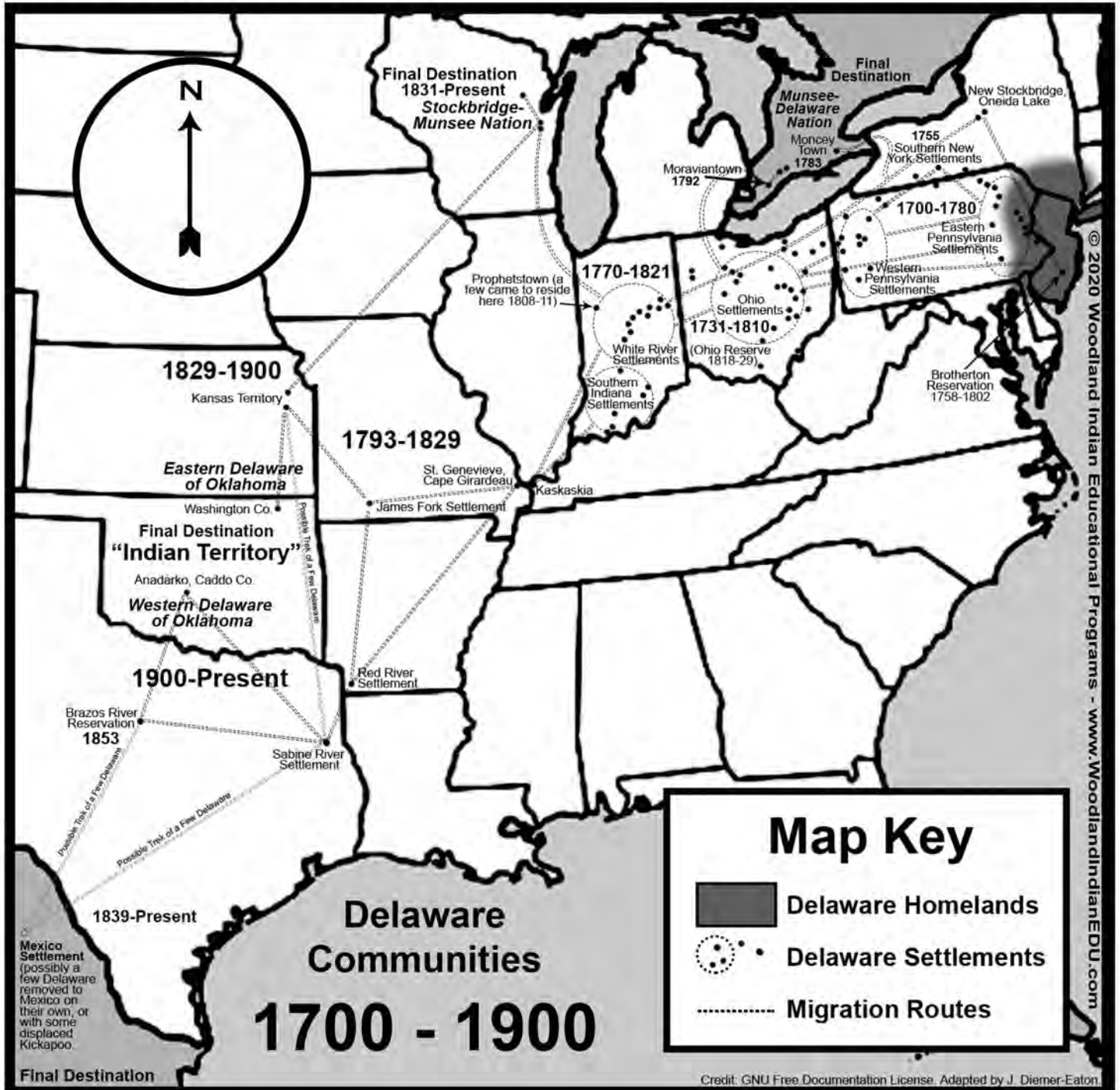
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Name _____

Date _____

Forced Migrations, Removals & Displacement



1. What state is fully engulfed by Delaware homelands? _____
2. Name at least one other state that has areas of Delaware homelands. _____
3. In what general direction did the Delaware People move from 1700 to 1900? _____
4. Why did most Delaware People *have* to move away from their eastern homelands? _____

Name _____ Date _____

Forced Migrations, Removals & Displacement continued. Online searches will help you answer these questions.

5. What does “forced migration” mean? _____

6. Look up and define “colonialism?” How did European colonization of North America affect Native Peoples like the Delaware? _____

7. Delaware communities were already settling more and more westward by the time the *Indian Removal Act* was signed into law in 1830. What did this act establish and for what purpose? _____

8. Name the three U.S. federally-recognized Native American tribes that resulted of Delaware communities being removed westward (clue: two are located in Oklahoma, and one in Wisconsin).

1. _____
2. _____
3. _____

9. How many Delaware persons are there today whose ancestors were displaced from their eastern homelands to the Midwestern United States and Canada? Circle the answer below.

A. Less than 5,000 B. 5,001 to 10,000 C. More than 10,000

10. The Delaware are a *Woodlands tribe* because they come from the Eastern Woodlands region. The Eastern Woodlands region encompasses most U.S. land east of the Mississippi River. Name five more Woodlands tribes/communities that were relocated to *Indian Territory* from east of the Mississippi River.

1. _____
2. _____
3. _____
4. _____
5. _____



A Delaware sister and brother dressed in their finest, 1830.

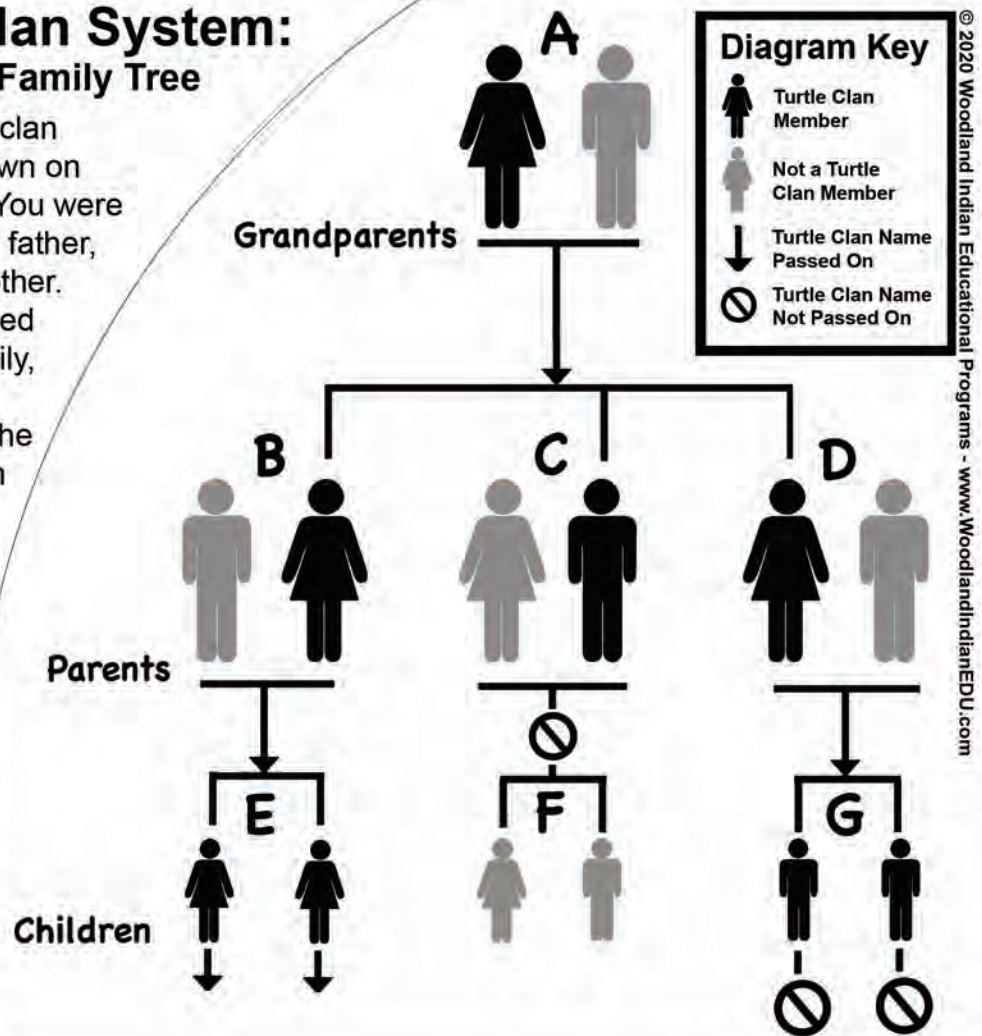
Name _____

Date _____

The Delaware Clan System: A Branch of the Turtle Family Tree

For most Native Americans, clan membership was passed down on only one side of the family. You were either the same clan as your father, or the same clan as your mother. When the clan name is passed through the men of your family, you are inheriting it through **patrilineal** descent. When the clan name is passed through the women of your family, you are inheriting it through **matrilineal** descent.

The Delaware trace their clan lineage through matrilineal descent. The diagram to the right shows three generations of Turtle Clan members (shown in black). Use this diagram to answer the following questions.



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Questions

1. Grandma (A) belongs to the Turtle Clan. Why are her grandchildren in bracket F not the same clan as herself?

2. The children in bracket E and G belong to the turtle clan. Why can E pass along their clan name to their future children but G cannot?

3. The boys in bracket G will need to learn skills as they grow up, so they may become productive members of their Delaware community. These brothers will be taught a lot by both their father (D) and their uncle (C). The Delaware uncle loves all his nieces and nephews, but based on what you have learned about the Delaware clan system, why do you suppose a **maternal** uncle takes special care to help raise his sister's children?
