Pioneering

Class Overview

1. Introduction
    a. Ask the students to sit down on the benches in the cabin or around the fire circle outdoors. Have the students give their name and one thing they "know" about pioneers or one thing they'd like to learn about pioneers.
    b. Lead a discussion about the pioneers. Some sample discussion questions: What is a pioneer? Who were the pioneers who came to this area? Where did they come from? How did they get here? What do you think they found when they got here? What kind of work did they need to do when they got here in order to survive? Who did that work? Why did they leave their homes and families to come? How do you think their lives were different from ours today?
    c. Explain to the students that they will have the opportunity to explore a cabin that was built around 1840, and do some of the common activities of the pioneers who came to Northern Illinois in the early to mid-1800's: using some woodworking tools and making candles.
2. Progression of Activities – This is a suggestion and can be changed, particularly if there are 2 groups using the cabin at one time.
    a. Cabin Exploration
    b. Tools
    c. Candle Dipping
3. Learning Standards Addressed
    a. 4.A.2b, 4.A.2c, 4.A.3c, 4.A.3d
    b. 13.B.2c
    c. 16.B.2d, 16.D.2b, 16.D.3a, 16.D.3b, 16.E.2a, 16.E.3b
    d. 17.D.2b
    e. 19.A.2, 19.A.3, 19.C.2a, 19.C.3a
    f. 21.A.2b, 21.A.3a, 21.B.2
4. Vocabulary
    a. Pioneer - a person who is among those who first to enter or settle a region, thus opening it for occupation and development by others; one who is first or among the earliest in any field of inquiry, enterprise, or progress.
    b. Hewn – to make, shape, smooth, etc., with cutting blows.
    c. Paraffin – a waxy substance made from crude petroleum.
    d. Rive – To rend asunder by force; to split; to cleave; as, to rive timber for rails or shingles.
    e. Tallow – the harder fat of sheep, cattle, etc., separated by melting from the fibrous and membranous matter naturally mixed with it, and used to make candles, soap, etc.
5. Wrap-Up
    a. Ask the students to share something new they have learned about the pioneers in this area.
    b. What did you most enjoy that we did today? What did you least enjoy? Why?
    c. Would you be willing to go back in time to live like the Rice family for a day? A week? A month? A year?

Background Information About Pioneering

Cabin: The cabin was built sometime between 1837 and 1843 by David Rice, who came to Illinois from Maryland. According to the 1840 census, David, a farmer, and his wife, Catherine, had 2 young children. The cabin was originally located near Leaf River (Northeast of Oregon). It was discovered in the 1960's when the owner of the land was dismantling his old farmhouse. Under the siding of the house, he found thick logs, hewn with a broad axe. He carefully dismantled the rest of the house, leaving the log cabin structure standing. He donated the cabin to the Ogle County Historical Society, who later donated it to Taft campus. It was dismantled and relocated to its present location in the 1970's. Only the hewn logs are original to the cabin. The ceiling, roof, flooring, and chimney were rebuilt. The cabin was originally built with 2 stories, but the upper level was not salvageable.

The interior whitewash was done several years ago using crushed limestone, salt, and milk. Pioneers whitewashed the walls to brighten the interior of the cabin. It smelled like sour milk in the cabin for a few months after it was done. The bed, table, and benches were built by the Taft maintenance staff, using patterns from the time. The artifacts in the cabin are either reproductions or were purchased by the Taft staff at antique stores and flea markets. Most of the nails and hooks inside the cabin were made and donated by the blacksmith at the John Deere Historic Site in Grand Detour.

The "Sleep Tight" Myth – Interpreters at history sites all over the country espouse the knowledge that this phrase relates to beds with rope supported mattresses common prior to the late 1800's. However, according to Evan Morris, the Word Detective, this "constitute[s] one of today's major 'vectors' or carriers of unfounded etymological 'urban legends.'" The Oxford English Dictionary gives one of the definitions of the word "tight" as "Soundly, roundly; now chiefly in colloq. phr. (***good night***) ***sleep tight***, a conventional (rhyming) formula used when parting for the night or at bedtime."

Tools: The 4 different tools used at the cabin represent a small example of the variety of different tools used by the pioneers in this area. With a few exceptions, most things made of wood were homemade in the early 19th century. Children, especially the boys, would learn to use these tools at an early age. Women and girls may also have used these types of tools on a regular basis, especially if there were few boys in the family. While chores were generally strongly gender-linked, the circumstances on the pioneer farm often muted gender differences. Women's and girls' labors were needed outside the home in order to maintain the farm.

Candle Dipping: Candle dipping was a very important chore on the pioneer farm. Aside from the fireplace, candles were usually the only source of light in the cabin. In the winter time and in homes with few or no windows, candle light was essential in order to get the work done. Candles were made with boiled animal fat, called tallow. It was a messy, smelly job that was usually done by the children or woman of the family. Candles could also be made with beeswax, but there wasn't enough available to make all the needed candles. Beeswax candles would be reserved for special occasions, such as Christmas dinner. Autumn was candle making season, as that was usually the time of year when animals were butchered. After the tallow was ready, the wicks needed to be made by twisting plant fibers or rags. Tallow was melted in large pots, and the children would tie wicks to a stick, in order to dip several candles at once.

Cabin Exploration

Objective: Students will become familiar with the living situation and household items of the early settlers to this area.

Method: Students will explore a home built around 1840.

Location: Pioneer cabin site

Time: 30 minutes

Materials: All materials are stored in the cabin.

Procedure:

1. Have the students follow you into the cabin and sit on the benches. Give them some background information about the cabin (see "Background Information About Pioneering").
2. Lead a discussion about the cabin. Have the students note the construction and materials used. Some sample questions: The cabin is built with hewn logs; what does that mean? Why do you think they used logs to build the cabin? Why did they whitewash the interior walls? How long do you think it took the family to build the cabin? What are some of the differences and similarities to your own home?
3. Tell the students that they will have the opportunity to get up and look around at the cabin and the things in it. Before allowing them to do so, give the following instructions. They may touch and hold the items in the cabin, except the spinning wheel. Tell them that some are artifacts and some are reproductions; but none are cheap to replace, so they need to be careful. Some of the items do have the potential to inflict injury (i.e. the sheep shears, fireplace tools, etc.), so they should not be swinging them around or pointing them at each other. They also should not move, touch, or play with any of the lit candles. One person at a time may gently sit on the bed. They should not sit on the rocking chair. Let them know that, after a short amount of exploration time, they will sit back down and discuss the items.
4. Walk around and monitor as the students explore the cabin. When their interest starts to wane, ask the students to return to the benches.
5. Ask if the students have questions about any of the items in the cabin. Ask the students what <u>they</u> think the different items may have been used for, instead of just giving answers. If you don't know what something is, let the students know that you will ask a staff member later or challenge them to look it up on the Internet back at school.

Wrap Up:

1. What are some of the differences between our modern homes and this cabin? What are some of the similarities?
2. Are there any items in here that we still use today? Which ones? If so, how are they different today?
3. Homes were not wired for electricity, and TV's and computers were not invented yet? How did this family occupy their time? What did they do for fun?

Clean Up:

1. Make sure all candles are extinguished.
2. If a fire was made in the fireplace, make sure to let it die down before the end of class. Then, spread the ashes so that there is no flame. DO NOT PUT WATER ON THE HEARTH.
3. Leave the inside of the cabin as you found it.
4. If you are the last group using the cabin, make sure all tools and candle making supplies are put inside and lock the door.

Tools

Objective: Students will learn how to use a few common tools used during the early 19th century.

Method: Students will see a demonstration of tool usage and have the opportunity to try the tools.

Location: Pioneer cabin site

Time: 30-40 minutes

Materials: 3-4 draw knives, 2-man cross-cut saw, 3-4 augers, froe and maul (froe club)

Procedure:

Set-Up:

1. Prior to the children's arrival at the cabin, set out the tools and get the pieces of wood needed to use them. Use pieces of wood from the wood shed for the draw knives and maul/fro. Logs to cut with the cross-cut saw and stumps to drill with the augers should already be in place.
    a. Choose longer pieces of wood to put in the draw shave benches. Try to find pieces with few knots. Place the draw knives across the draw shave benches.
    b. Lay the 2-man saw on the log in the saw horse.
    c. There are several large pieces of wood farther down from the saw horse for use with the augers. Place the augers so that they are leaning on these pieces of wood.
    d. For the froe and maul, choose wood pieces that are straight grained with no knots. Place them on the bench next to the splitting stump. Lay the froe and maul on the stump.

Introduction:

1. Ask the students about the work that would need to be done in order to build and maintain the Rice's home and farm. Who would do that work? What tools would they use?
2. Tell the students that they will be using 4 of the common tools used around the pioneer family's home and farm.

Activity:

1. With the students, go to each of the 4 tool stations. Demonstrate how to use the tools and discuss the applications of each.
    a. Draw Knives – Used to take rough shavings off a piece of wood to shape it. It could be used to make things such as shingles, chair legs, or pegs.
        i. The wood to be worked is placed under the vise on the draw shave bench and one or both feet should be placed on the pedal to hold the vise down.
        ii. Show the students how one side of the draw knife is sharpened to create a bevel. When placing the draw knife on the wood to be worked, the sharpened side goes up.
        iii. Draw the knife toward the body, holding the knife at an angle such that it takes shavings off the piece of wood. If the angle is too small, nothing will be shaved off; if the angle is too big, the student will be trying to take off more than the tool can do. Do not scrape the tool back and forth over the wood.
        iv. Safety instructions: The draw knife should be held only by the wooden handles; hands and fingers should never be on the blade. When using, make sure elbows

are close to the body. If the knife gets stuck in the wood, don't pull with force; pick it up and move it to a different area of the wood. If the wood needs to be turned to shave a different side, have a partner lift the vise while turning the wood.

b. Two-man Cross-cut Saw – Used to cut wood at a right angle to the grain. Most often used to buck up a log into smaller pieces. This is a champion tooth saw with 2 different types of teeth: cutting teeth and rakers. The rakers remove the wood shavings from the groove.
    i. The log to be bucked is placed on the saw horse and secured with the tie down straps.
    ii. The 2 sawyers pick up the saw handles and set the blade on the log about 1-2 inches from the cut end. Please do not allow the students to cut off a tree cookie thicker than 1-2 inches.
    iii. The 2 sawyers alternate pulling the saw towards themselves. They do not push the saw, as that just causes it to bend. To correctly use the saw and get the most cutting per effort, the sawyers should use the whole blade, but, as this can be difficult for kids, they usually use a smaller part of the blade.
    iv. Safety instructions – Students should keep their hands on the handles at all times while sawing. If the blade gets stuck in the groove, they need to lift it out and gently set it back in before they resume sawing. When finished using the saw, they should carefully place it back on the saw horse as they found it.
c. Auger – Used to drill a hole into a piece of wood. Some possible applications include the construction of furniture, ladders, candle holders, and peg holders. Because nails were hand forged and expensive, log cabin walls were usually held together with pegs driven into the joints. Augers come in a wide variety of sizes.
    i. The auger is placed over the spot where a hole is needed. Apply pressure and turn clockwise. Continue this until the hole is as deep as is desired.
    ii. Make sure that the students put the augers back on the wood pieces at the auger station so they can be easily found.
d. Froe (with Maul or Froe Club) – Used to split wood with the grain (also called riving). Boards, shingles, clapboards, fencing, basket splints, barrel staves, lathe, and kindling were all made with a froe. We use it to make kindling.
    i. Select a suitable piece of wood for splitting. Try to find wood pieces with a straight grain and no knots. The froe cannot split pieces of wood wider than the length of the tool, but since kids are doing it, it should be considerably smaller.
    ii. Set up the piece to be split on the splitting block so that the grain of the wood is perpendicular to the splitting block surface. If necessary, hold it in place until the froe is set up. Set the froe, blade side down on top of the wood piece, wherever the split is desired. Make sure the set up is sturdy, then if someone is holding the wood piece up, he/she should let go before the hitting starts.
    iii. Strike the froe with the maul directly over the wood piece to wedge the froe into the wood. When it is level with the wood, hit it on the side farthest from the handle, while holding the handle firmly to keep it from lifting. A great deal of force is not needed when striking the froe. The maul should never be lifted over the head, and the force of gravity is usually enough to provide the power needed to drive the froe.
    iv. When the froe is sufficiently lodged in the wood piece, hold the piece of wood steady, then push and pull the handle to pivot the froe, forcing the wood to split. As the split widens, move the froe farther down and continue to push and pull until the piece splits completely off.

v. Continue to split wood pieces until they are suitable sized for kindling (about the width of a finger).
vi. The froe and maul are usually operated together by one person, but as they are heavy tools, this is pretty challenging for kids. They can work together with one person holding the froe and the other striking with the maul.
vii. Safety instructions – The froe should only be held by the handle; hands and fingers should never be near the blade. Make sure the students understand that they should not wield the maul with extreme force. Anyone observing should stand clear to avoid being hit, and those using the tools should be aware of others around them at all times. Wood to be split or finished kindling should be up on the bench near the splitting block so that no one trips on it. If the froe becomes wedged in at a tilt and needs to be straightened, make sure the student using the maul stops striking before attempting to fix it.

2. After explaining how to use the tools and giving the safety instructions, split the group into 4 groups and let each group know at which tool station they will be starting. Also let them know which tool station to go to next in a "round robin" fashion.
3. Give them a few minutes at each tool before directing them to "Switch." Usually the time it takes for the students in one small group to complete the froe station is enough time.
4. Make sure that, during the rotation, there is always an adult supervising the activity at the froe and maul station, as it is the tool with the most potential to inflict injury.
5. When they have gone through the rotation of tools, discuss their experiences.

Wrap Up:

4. Which tool was easiest; which was hardest?
5. Why was it important for pioneers to be skilled in using different wood working tools?
6. Who does this kind of work today, and what machines do they use? How has that changed our lives?

Clean Up:

1. If another group will be using the cabin later that day, leave the tools out. Replace the wood pieces for the draw knives and froe stations, if needed.
2. If the cabin site will not be used later in the day, put the pieces of wood from the draw knife and froe stations into the wood shed. Kindling should go into the metal garbage can. Put all the tools into the cabin.
3. Close and lock the windows and LOCK THE CABIN DOOR.

Candle Dipping

Objective: Students will learn how the pioneers made hand-dipped candles, from what they were made, and why they were important.

Method: Students will discuss candle making in the early 19th century and each will make a candle.

Location: Pioneer cabin site

Time: 30 minutes

Materials: 2 small coffee cans filled with a mixture of paraffin wax and beeswax (about a 3:1 ratio), 2 large coffee cans about ¼ full of water, 2 small coffee cans full of water, wicks, newspaper, masking tape, Sharpie marker, welding glove, pliers

Procedure:

Set-Up:

2. Start a fire outdoors and get some hot coals.
3. Prepare the wax by filling the larger coffee cans about a quarter full of water. Water can be found in the rain barrel near the cabin. In the winter time, the Taft staff will bring a bucket of water to the cabin. Place the smaller cans with the hardened wax into the larger can of water (double boiler). If necessary, add some more paraffin wax pieces. Place in a secure location on the fire. Keep an eye on the boiler cans as the wax starts to heat. A "wax explosion" can occur if the cans tip over or if the water boils away. PLEASE DO NOT HEAT WAX IN THE FIREPLACE INSIDE THE CABIN. Put the wicks, newspaper, masking tape, and marker on the outdoor table. If needed, fill the water cans and put them on the outdoor table as well (the water cans are not needed for candle dipping in the winter).
4. Place the welding glove and pliers near the fire for use in removing the cans from the fire.
5. Have another person bring your group of students to the cabin, or if there is another adult who can stay with the fire, go pick up your group. NEVER LEAVE THE FIRE UNATTENDED!

Introduction: Discuss candles with the students. Possible questions include: Why did the pioneers make candles? How many candles do you think they would make and use throughout the year? What materials did they use to make candles? When would they have made candles? Who's responsibility was it?

Activity

1. Using the heat resistant glove and/or the pliers to remove the wax cans from the fire, set up the wax and water cans on the outdoor table. PLEASE DO NOT DO CANDLE DIPPING INDOORS. NEVER ALLOW STUDENTS TO DIP CANDLES WITH THE WAX STILL ON THE FIRE!
   Warm weather set up: The two wax cans should be on opposite sides of the table, and the two water cans should be opposite each other on the other sides (i.e. the wax cans on the long sides and the water cans on the short sides). The small wax cans can be taken out of the hot water.
   Winter set up: The two wax cans should be on opposite sides of the table. Water cans are not necessary. Leave the wax cans in the hot water.

2. Demonstrate how to make a candle.
    a. Hold the end of a piece of wick. Dip it into the melted wax. On the first dip, you may need to shake the wick a bit to get it submerged, as it will float on top of the wax.
    b. Walk to the water can (if using) and dip into the water. If necessary, run your fingers down the length of the candle to straighten it.
    c. Walk to the other wax can and dip in the wax. Dips should be quick. Holding the candle in the hot wax will cause any wax that has already started to harden on the wick to melt.
    d. Continue around the table dipping into the alternate cans until the candle is about as wide as a pinky finger. Please do not allow the students to make thicker candles.
    e. When the candle is big enough, hold it in the water to harden it.
3. Remind the students that the wax is hot, so they should be careful to make sure they don't dip their fingers into it.
4. Distribute a wick to each student. Have them begin, following each other around to table and dipping in the cans as they pass them.
5. When they are finished, attach a piece of tape to the wick of each candle with the student's name or initials on it. Collect all the candles, wrap them in a piece of newspaper, and label it with the group name (letter, number, etc.).

Wrap Up:

7. Did you enjoy this chore? Why or Why not? What if you had to make all the candles the family needed for the winter using animal fat?
8. How might the pioneers have done this to make it go faster?

Additional Safety Information:

If a wax fire should start, DO NOT TRY TO EXTINGUISH IT WITH WATER! If there are students there, make sure they are outside of the fire circle area. If you can, with the welding glove on and using the pliers, pull the can off the fire. If this is too dangerous, just leave it until the flames die down. Place the lid of the garbage can (near the wood shed), over the wax can to smother the flame.

Clean Up:

If another group will be using the cabin later that day:

5. Leave the wax and water cans on the outdoor table. If the wax is getting low, add more. Wax pieces can be found in the cabin, in the cabinet in the back corner.
6. Spread the fire within the fire circle so that no flames can be seen. Do not move burning logs to a new location.
7. Let your Taft coordinator know if any materials need to be restocked.

If the cabin site will not be used later in the day:

1. Empty the water from the coffee cans (including the hot water from the double boiler cans) and put them, along with the wax cans, into the cabin on the wood box. The tape, marker, heat-resistant glove, pliers, and unused newspaper can go there, as well.
2. Spread the fire within the fire circle so that no flames can be seen. Do not move hot logs to a new location. Extinguish the outdoor fire with water, but DO NOT put water on the fireplace indoors.
3. Close and lock the windows and LOCK THE CABIN DOOR.
4. Let your Taft coordinator know if any materials need to be restocked.