Housing Native American Artifacts

2021

Ford Conservation Center

Acknowledgements

Storage conditions have long been recognized by museum professionals as important factors in the long-term survival of artifacts. Although all materials deteriorate over time, stable environment, controlled lighting, careful handling, and the use of appropriate housing materials are strategies developed to slow the rate of degradation.

The housings found within this packet were developed by Jessica Waite and Tina Koeppe with assistance from the staff of the Ford Conservation Center, a division of History Nebraska as part of a larger project, funded in part with a Save America's Treasures grant, to improve the storage conditions for the History Nebraska Native American collection.

Inside this issue:

Support Trays

Trays are used to provide adequate support and handling of various types of objects and may also be used as space saving tools by stacking multiple trays in one box. The size of the box, the height of the box and the weight of the objects will determine whether or not a single, double, or triple tray will be required.

The trays were made using pH neutral, corrugated blueboard.

Trays may be covered with ethafoam and soft-structure Tyvek for additional cushioning or padding. The trays are designed to fit in standardized or custom boxes.

Materials Needed:

- 1/8in or 1/4in Ethafoam
- Variable heat hot glue gun
- Glue Sticks
- Metal straight edge
- Soft-structure Tyvek, cut to size
- pH neutral blueboard, 1/4 inch thick
- Utility Knife

Directions

Single Layer Tray

1) Determine the dimensions of the storage box and the objects that will be stored in the box (length, width, height). The height of the objects and the height of the box determine how many trays may be placed in the box.
2) Draw the tray according to the diagram (Fig. 1)
3) Cut out the tray with a sharp utility knife. Change the blade often.
4) Cut the corners at an angel to help lift the tray out of the box.

Double Layer Tray

1) Determine the dimensions of the storage box and the objects that will be stored in the box (length, width, height). The height of the objects and the height of the box determines how many trays may be placed in the box.
2) The length and width of a box and the weight of the objects determines the need for a double tray. If a single tray bends as it is lifted, a double layer tray is required.
3) A double tray requires two trays glued together with the corrugated blueboard at right angles to adjacent layers for strenght (Fig. 2).
4) Draw the first tray according to the diagram in Fig. 1 with the flutes running lengthwise.
5) Cut out the tray with a sharp utility knife. Change the blade often.
6) Draw the second tray according to the diagram in Fig. 1 so the flutes of the blueboard are running at right angles.
7) Cut out the tray with a sharp utility

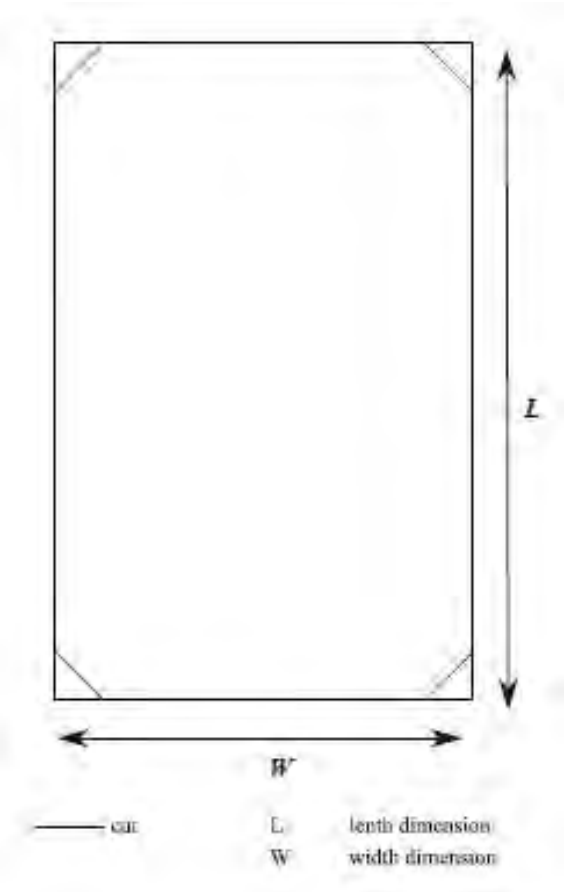


Fig. 1

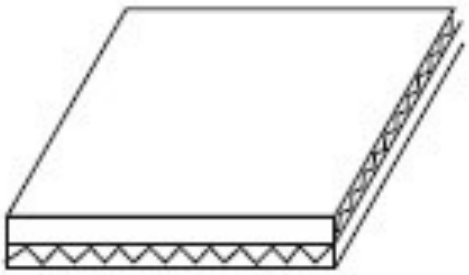


Fig. 2

knife. Change the blade often.

8) Using the hot glue gun on high setting, adhere the two trays together.

9) Cut the corners at an angle to facilitate lifting the tray out of the box.

Triple Layer Tray

1) Determine the dimensions of the storage box and the objects that will be stored in the box (length, width, height). The height of the objects and the height of the box determines how many trays may be placed in the box.

2) The length and width of a box and the weight of the objects determines the need for a triple tray. If a double tray bends as it is lifted, a triple tray is required.

3) A triple tray requires three trays glued together with the corrugated blueboard at right angles to adjacent layers for strength (Fig. 3).

4) Draw the first tray according to the diagram in Fig. 1 with the flutes running lengthwise.

5) Cut the tray with a sharp utility knife. Change the blade often.

6) Draw the second tray according to the diagram in Fig. 1 with the flutes running widthwise.

7) Cut the tray with a sharp utility knife. Change the blade often.

8) Draw the third tray according to the diagram in Fig. 1 with the flutes running lengthwise.

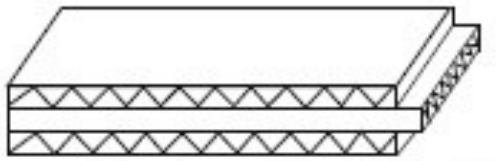


Fig. 3

9) Cut the tray with a sharp utility knife. Change the blade often.

10) Using the hot glue gun on high setting, adhere the three trays together.

11) Cut the corners at an angle to facilitate lifting the tray out of the box.

Cushion or Padding

1) Some objects require rigid support mounts, such as trays, but also additional soft support to prevent further damage. Determine if the objects need additional cushioning.

2) If the objects need cushioning, cut out 1/8in or 1/4in ethafoam according to the diagram in Fig 1, using the tray's dimensions.

3) Using the hot glue gun on low setting, adhere the ethafoam to the tray. Do not use the hot glue gun on high setting for it will melt the ethafoam.

4) Cut out the same number of ethafoam pads as the number of trays.

Cover

1) Trays may also be covered with soft-structure Tyvek to prevent movement.

"Do not use the hot glue gun on high setting for it will melt the ethafoam."

2) To determine the dimensions of the Tyvek cover, add 1.5in to the length and width of the tray.

3) Cut out the Tyvek cover with a sharp utility knife. Change the blade often.

4) Using the hot glue gun on low setting, adhere the Tyvek to the underside of the tray.

Stacking Tray

"Stacking trays is a great way to maximize space. The amount of space between each tray should be enough to prevent flattening, abrasion, or other damage to the objects from the tray above."

1) Stacking trays is a great way to maximize space. The amount of space between each tray should be enough to prevent flattening, abrasion, or other damage to the objects from the tray above.

2) Determine the height of the tallest object on the tray. Add 1/2in to the height to determine the height of the rigid tray supports. Tray supports can be made from ethafoam (for light weight objects) or blueboard (for medium to heavy weight objects).

3) The number of tray supports is determined by the size of the tray and the weight of the objects. The trays should remain rigid and not bend or buckle when loaded with objects and placed within the box. The ize of the tray and weight of the objects determines the number of tray supports needed as well as the type of support needed. Small trays should have for supports at the edge (Fig 4); medium trays should have four edge supports with one to two supports in the center (Fig. 5) and large trays should have four to six edge supports with two to

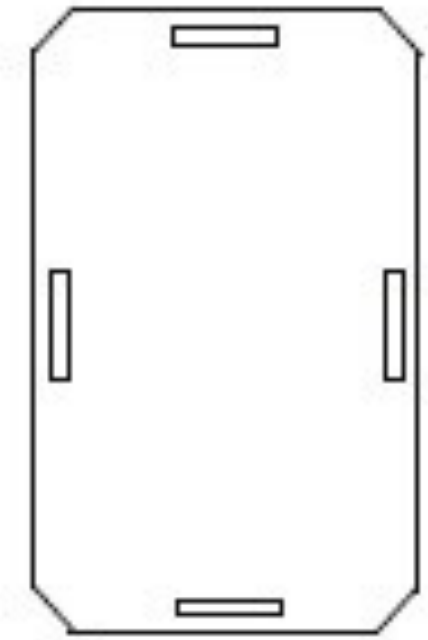


Fig. 4

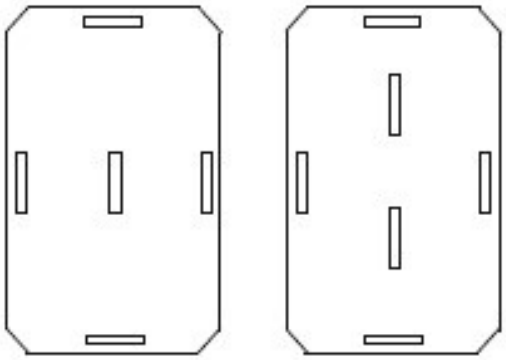


Fig. 5

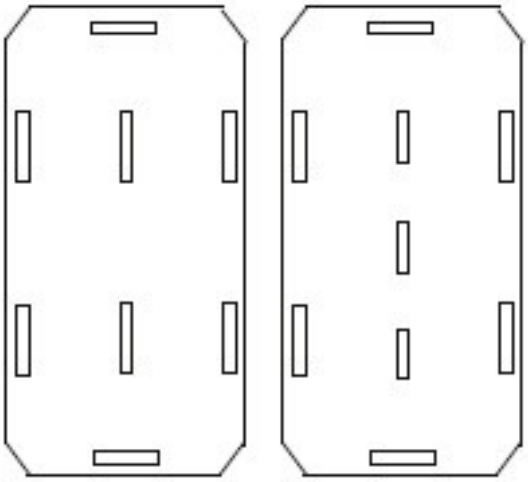


Fig. 6

three supports in the center (Fig 6).

4) Tray supports made of blueboard can be made into triangular or rectangular supports. Triangles should be used for heavier objects. The dimensions of the supports are determined by the person making the housings.

5) For triangle blueboard supports, refer to the top diagram in Fig. 7. Cut along the solid lines only using a sharp utility knife.

6) Score along the dashed lines using the utility knife or a bone folder. Be careful not to cut through the underside of the blueboard.

7) Fold the blueboard along the scored lines. Using the hot glue gun on high setting, adhere the two sides together.

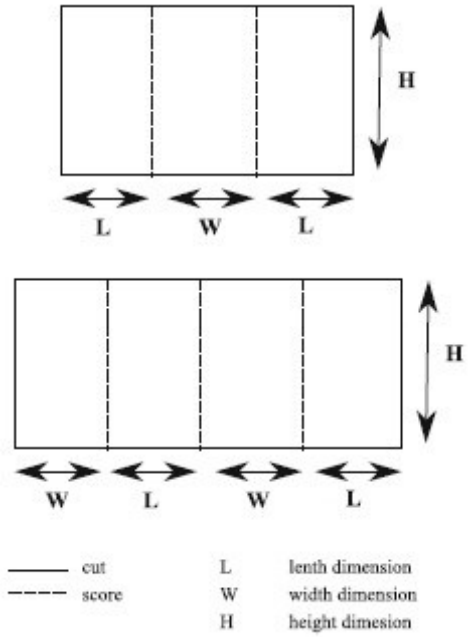


Fig. 7

8) For rectangular blueboard supports, repeat steps 5-7 using the bottom diagram of Fig. 7.

Storage of Arrows

These trays were developed to provide adequate support and storage of the arrow collection at the Nebraska History Museum. The arrows were originally piled atop each other in a box with no support. This storage system led to damaged fletching, broken feathers, and loose points. The tray is made using pH neutral corrugated blueboard and the arrows are supported with notched ethafoam planking or tri-rod.

Directions

Materials Needed:

- Medium polyethylene tri-rod or 2 inch ethafoam planking
- Variable heat hot glue gun
- Glue Sticks
- Metal straight edge
- pH neutral blueboard, 1/4 inch thick
- Utility Knife

1) Determine the dimensions of the storage box (length, width, height). A standard box of 18in x 40in x 6in is best for arrow storage. One box can hold two to three trays of arrows.
2) Using the directions from the section “Support Trays,” follow the instructions for cutting out stacking double tray.
3) Cut two pieces of ethafoam or tri-rod to fit the tray according to Fig. 1.
4) Using the hot glue gun on the low setting, adhere the cut foam to the tray.
5) Using the sharp utility knife, notch the tri-rod at predetermined intervals. The tri-rod can be notched into a “V” or “U” shape (see Fig. 2). The size of the notch should be the same size as the arrow shaft. Two much room can cause movement while too little room can cause abrasion.
6) Place arrows in notches, alternating fletching to point.

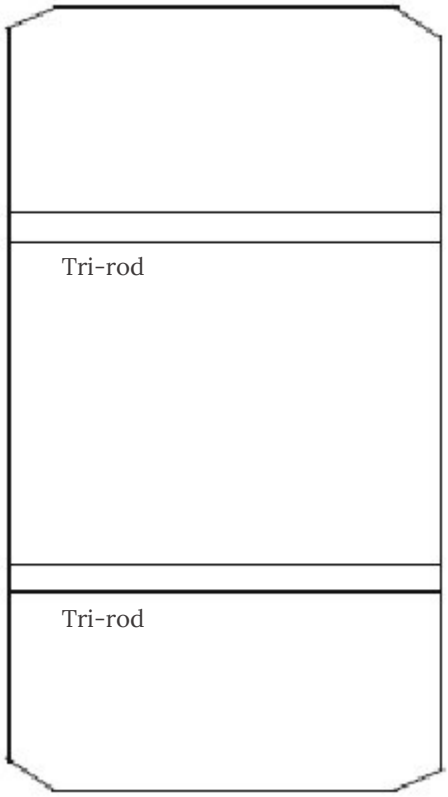


Fig. 1

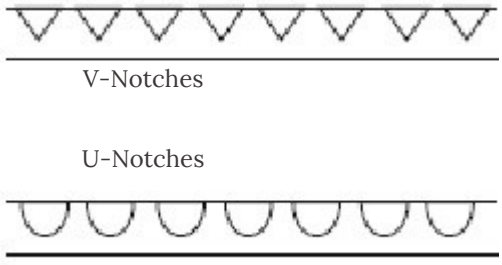


Fig. 2

Moccasin Trays

These trays were designed to provide adequate support and handling for moccasins were stored in inert storage drawers in a mobile shelving unit. These objects were piled atop each other in a drawer without internal supports. This storage system led to bead loss, torn leather and distorted shapes. Three standard size trays (large, medium, small) were created to accommodate the different sizes.

The trays are made using pH neutral, corrugated blueboard and covered with soft-structure Tyvek.

Directions

1) Determine the dimensions of the moccasins (length, width, height).
2) Draw the tray according to the diagram on the sheet of blueboard. Add 1in to the height of the tray for easier handling. When drawing the tray, use solid and dashed lines as illustrated in Fig. 1.
3) Cut out the tray with a sharp utility knife. Change the blade often. Cut along the solid lines only.
4) Score the dashed lines using the utility knife and straight edge or a bone folder and straight edge. Be careful not to cut through the underside of the blueboard.
5) Score the center on the underside of the blueboard to fold it in half.
6) The 1in x 2in tab will be used to create a flap that will wrap around the corner. Cut and score the 1in x 2in side flap according to Fig. 1.
7) Using the utility knife, cut the corrugation and inner layers of paper away from the 1in x 2in side flap (see Fig. 2).
8) Fold the blueboard along the scored lines. Be careful and work the blueboard gently to avoid splitting the board.
9) Using the hot glue gun on high setting, adhere the 1in x 2in tabs to the underside of the blueboard. (Fig. 2).
10) Fold the tray in half along the center line, scored on the under-

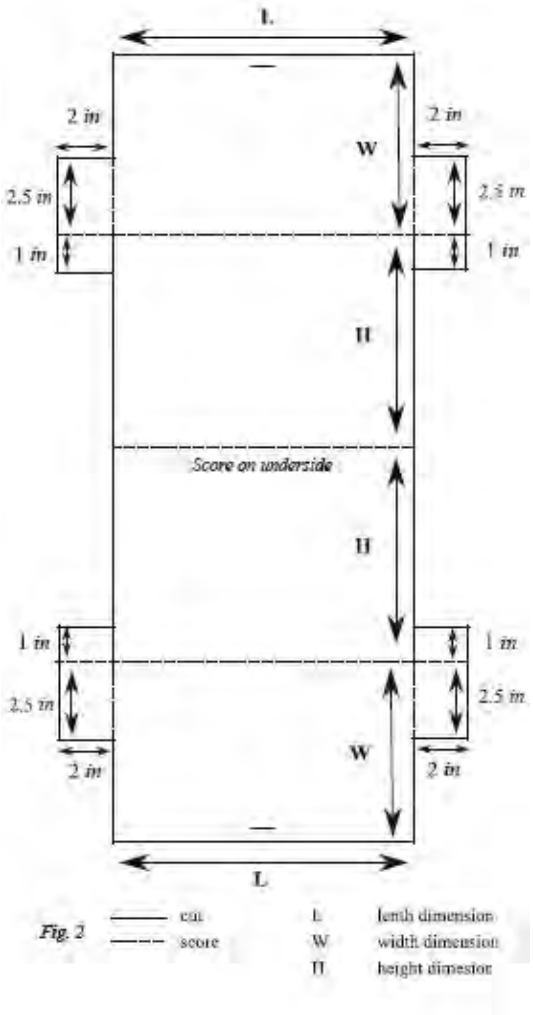


Fig. 1

Materials Needed:

- 100% cotton twill tape, 3/4in
- Variable heat hot glue gun
- Glue Sticks
- Metal straight edge
- pH neutral blueboard, 1/4 inch thick
- Soft-structure Tyvek, cut to size
- Utility Knife
- Bone Folder

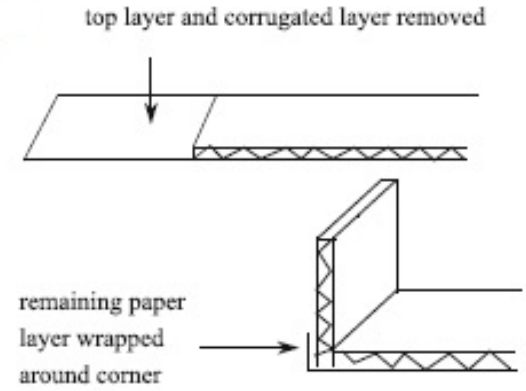


Fig. 2

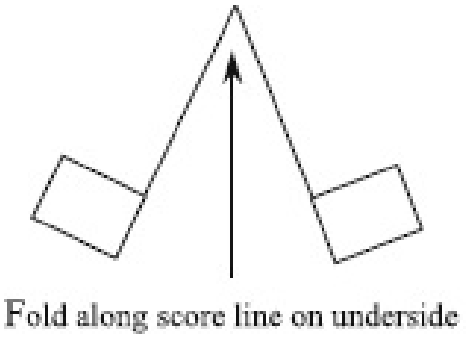


Fig. 3

side (see Fig. 3).

11) Adhere the two sides together using hot glue.

12) To cut out the soft-structure Tyvek cover, draw the diagram in Fig. 4. Use the tray dimensions for length, width, and height. Using a utility knife and straight edge, cut only solid lines.

13) Using the hot glue gun on low setting, adhere the Tyvek to the underside of the tray.

14) Secure the moccasins to the tray by tying them down with cotton twill tape. The slits allow the tape to pass under the tray and to be tied at the top.

"The tray may be cut along the center line to create single moccasin trays for better space allocation."

Additional Information

The moccasin trays shown here were modeled after those developed by the Minnesota Historical Society. The trays were designed to fit into standardized boxes of 19in x 24in and 25in x 25in. The tray may be cut along the center line to create single moccasin trays for better space allocation.

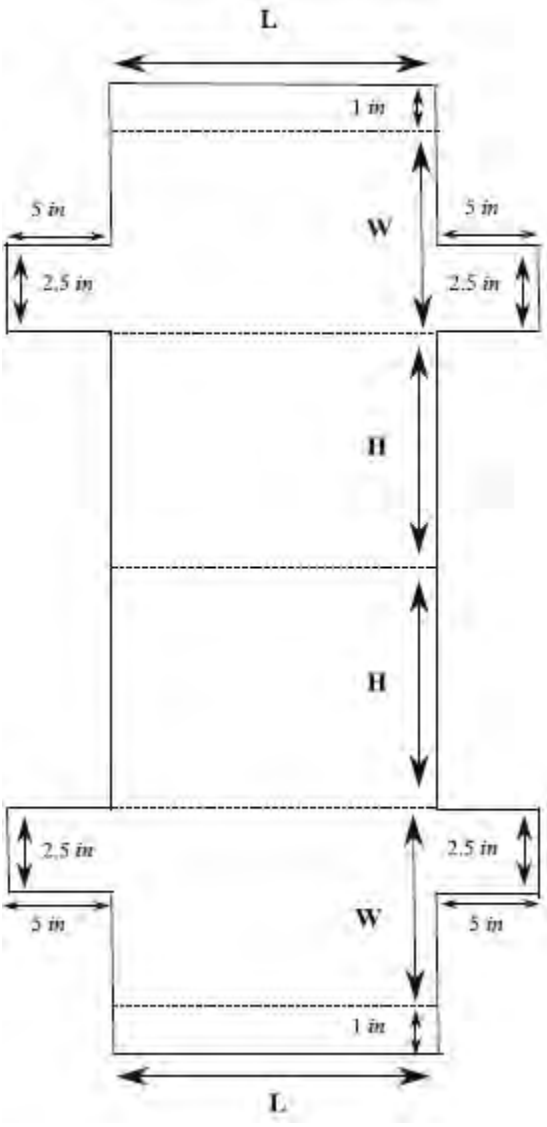


Fig. 4

Internal Supports for Leggings

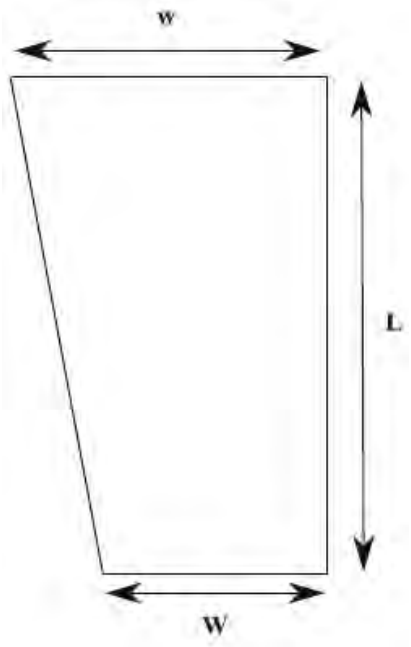
These internal pads were designed to provide adequate internal support and to prevent further folds and creases from occurring. The leggings are in the Native American collection at the Nebraska History Museum. The leggings were stored in inert storage drawers in a mobile shelving unit and piled atop each other. This storage system led to bead loss, torn leather, and creases. Custom supports were created for each legging and the leggings were stored together on trays.

The internal supports are made from soft-structure Tyvek sewn together and filled with loose polyester batting. The leggings were tied to padded support trays with cotton twill tape and stored in standardized acid-free boxes.

Materials Needed:

- Flexible ruler
- Metal straight edge
- Soft-structure Tyvek, cut to size
- 100% white cotton thread
- Loose polyester batting
- Cotton twill tape
- Utility Knife

Directions



L length of legging
W width of opening at ankle
w width of opening at thigh

Fig. 1

1) Determine the outside dimensions of the leggings (length, width, height) to determine the size of the box needed to house the leggings.
2) Determine the inside dimensions at the thigh and ankle openings of the first legging.
3) Using your measurements, draw the diagram in Fig. 1 onto the soft-structure Tyvek. Cut out two pieces of Tyvek using a sharp utility knife. Change the blade often.
4) Place the two pieces of Tyvek with slick sides together.
5) Using 100% white cotton thread,

sew the pieces of Tyvek together on three sides, with a 1/4in seam.

6) Turn the pillow inside out.
7) Fill the pillow with loose polyester batting. Be careful to not overstuff the support.
8) Sew the fourth side together.
9) Repeat steps 2-7 for the second legging.
10) Using the section "Support Trays", follow the instructions for cutting out stacking double trays.
11) Cut slits in the tray as seen in Fig. 2.
12) Thread long pieces of cotton twill tape through the slits and under the tray to tie the leggings in place.

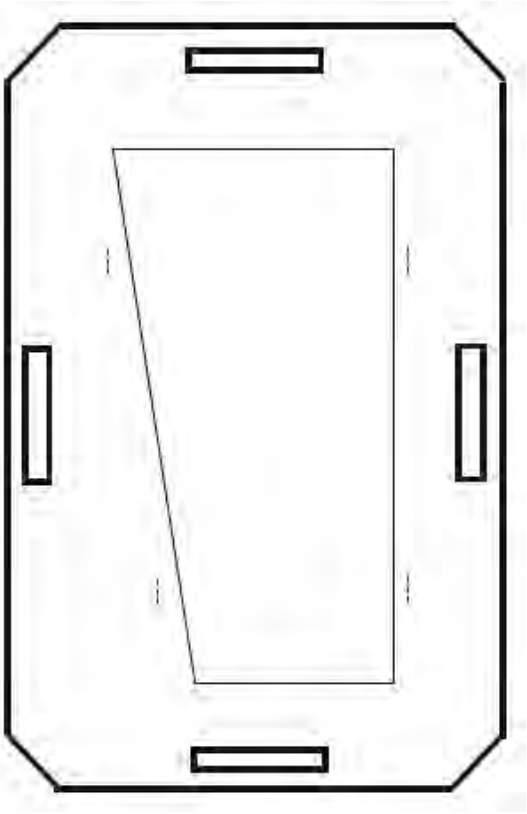
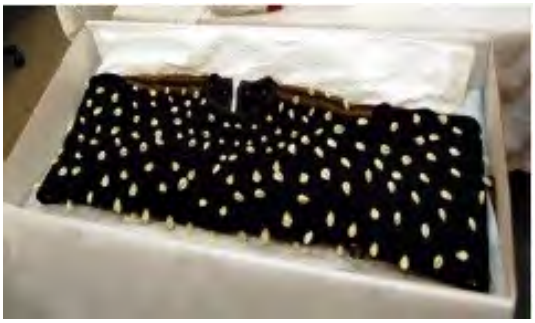


Fig. 2

Additional Information

The internal supports were used in the rehousing of the Native American leggings made of leather or textile and heavily decorated. Each pair of leggings were stored in standardized textile boxes of 18in x 40in x 6in.

Tyvek Pillows for Dresses and Blankets



These Tyvek pillows were developed to provide adequate support and handling of the fabric and leather dresses of the Native American collection at the Nebraska History Museum. The dresses were stored in inert storage drawers in a mobile shelving unit and piled atop each other. This storage system led to bead loss, torn leather, and creases. The technicians created a two-pillow support system for support

and space allocation.

The pillows are made from soft-structure Tyvek sewn together and filled with loose polyester batting. The pillows are designed to fit standardized textile storage boxes.

Materials Needed:

- Metal straight edge
- Soft-structure Tyvek, cut to size
- 100% white cotton thread
- Loose polyester batting
- Cotton twill tape
- Utility knife

Directions

1) Determine the inside dimensions of the storage box. (length, width, height).
2) Cut out two pieces of Tyvek using the length and width of the box.
3) Place the two pieces of Tyvek with slick sides together.
4) Using 100% white cotton thread, sew the pieces of Tyvek together on three sides with a 1/4in seam.
5) Turn the pillow inside out.
6) Fill the pillow with loose polyester batting. Be careful to not overstuff the pillow.
7) Sew the fourth side together, finishing the pillow.
8) Repeat steps 2-7 for the second pillow.
9) If two objects will be stored in one box, cut out a piece of Tyvek big enough to wrap around the object. Place the long piece of Tyvek in the bottom of the box with equal amounts on each side of the box.
10) Using the diagram in Fig. 1, place the object in the box using an 'S-Curve' method.
11) Place the bottom 1/3 of the object in the box.
12) Place one pillow in the box.
13) Carefully wrap the object around the edge of the pillow making sure there are no folds or creases.
14) Place the second pillow in the box.
15) Carefully wrap the object around the edge of the second pillow making sure there are no folds or creases.
16) If the object is a dress, carefully tuck the sleeves around the edge of the second pillow.
17) Wrap the extra amount of Tyvek around the object. Tie the Tyvek together with cotton twill tape.

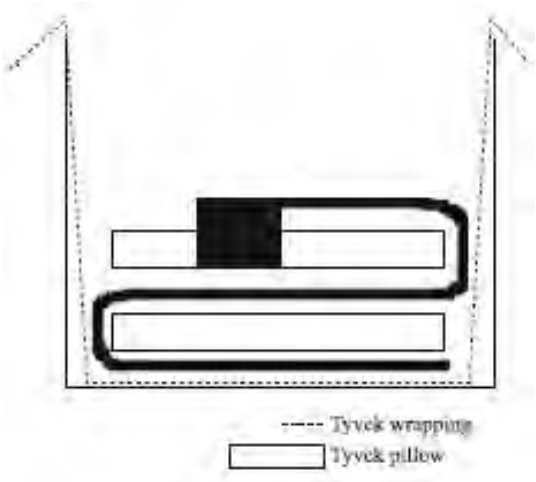


Fig. 1

Additional Information

The pillows were used in the re-housing of the Native American dresses made of leather or textile and heavily decorated with pony beads, glass seed beads, elk teeth, silk ribbons, and metal cones. The pillows are also used to rehouse the blankets and hides of the Nebraska History Museum's ethnographic collection. The dresses and blankets were stored in standardized textile boxes of 28in x 40in x 15in. Due to the limited availability of space, two objects were stored in the same box with the heaviest placed on the bottom. To protect the glass beads, pony beads, or other decorations, it is advised to add a third pillow between the two dresses for further protection.

Internal Support for Cradleboard Covers

Cradleboard covers require two types of support systems, internal and external. The following plans for an internal padded three-dimensional support was adapted from Nancy Iona "Padded Doll Supports for Cradleboard" http://stashc.com/the-publication/supports/malleable/padded-support-for-cradleboards/ and the National Park Service Conserve O Gram "Internal Supports for Buckskin Clothing Storage", September 2011, Number 5/3, https://www.nps.gov/museum/publications/conserveogram/05-03.pdf?pdf=5-3 .

The support helps maintain the shape of a cradleboard and prevent creases. The support is made from soft-structured Tyvek and is shaped like a baby with a head and body. The head and body sections are assembled separately and then joined. Each cradleboard is measured carefully to produce a custom-fit support.

Directions

1) Using a flexible ruler, determine the interior dimensions of the cradleboard cover (circumference, diameter, length). Determine the length of the body portion of the support and the separate head portion of the support as shown in Fig. 1.
2) Using the compass, draw a circle to match the diameter of the cradleboard cover. Add half an inch around for a seam allowance. This will be the bottom of the body portion of the support. (Fig. 3)
3) Cut a rectangle for the body that is the length of the cradleboard cover by the circumference, adding a half-inch seam allowance. (Fig. 2)
4) Fold the rectangle in half length-wise with slick sides together and pin along the long seam.
5) Sew along the long seam. You now have a hollow tube.
6) Pin the tube to the circular base putting slick sides together. Sew around the seams and then turn right-side out.
7) Fill the tube with polyester batting until firm.

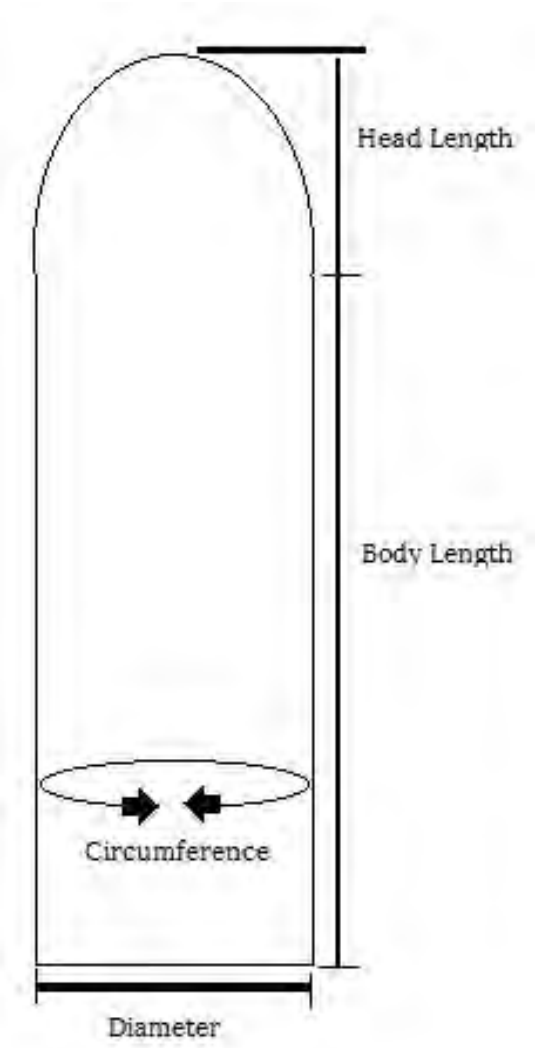
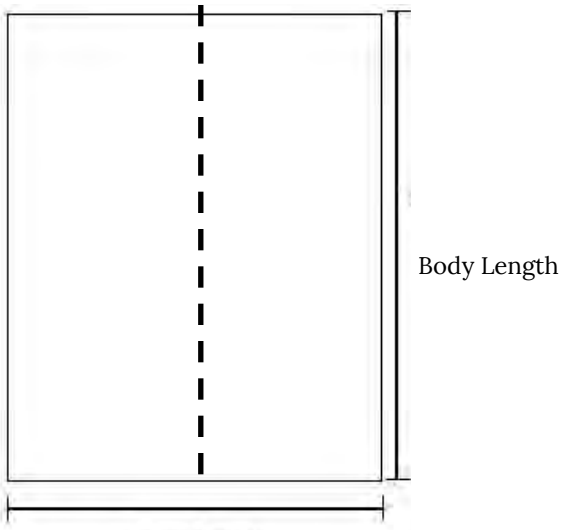


Fig. 1

Materials Needed:

- Flexible ruler
- Soft-Structure Tyvek
- Compass
- Polyester batting
- Scissors
- Sewing machine
- Thread and needle
- pH neutral blueboard, 1/4in
- metal straight edge
- Utility knife



Circumference Measurement

Fig. 2

8) Draw two circles of Tyvek using the length of the head area plus half an inch for seam allowance as the circumference, similar to Fig. 3, but using the head length measurement for the diameter.
9) Pin slick sides of the Tyvek together and sew, leaving space unsewn at the bottom for stuffing and attaching to the body.
10) Turn Tyvek right side out and fill with polyester batting until firm.
11) Pin and hand stitch the opening of head portion to the body portion. If needed, leave a space open, and add more stuffing the neck before hand stitching shut.
12) Gently place the form inside the cradleboard cover and secure with cotton twill tape.

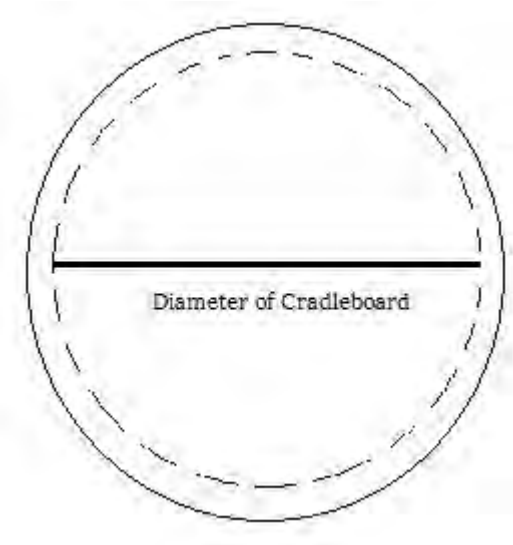


Fig. 3

13) Measure the length and height of the decorative portion of the head cover of the cradleboard cover.
14) Cut a piece of pH neutral blueboard to the length and height of the head cover.
15) Bend carefully and insert around the internal head sup-

External Support for Cradleboard Covers

Cradleboard covers need an external support system along with the internal support. This external support system provides support for the rounded shape of cradleboard cover.

The cradleboard cover mount is formed from three to five pieces of blueboard carved to the shave of the cradleboard cover. Areas that are in contact with the cradleboard cover are protected with a softer, thin closed-cell or crosslinked polyethylene foam sheeting to avoid abrasion. The mounts are secured to a standardized or custom-made box.

Directions

1) Determine the dimensions of the cradleboard cover (length, width, height). Determine the size box needed to house the cradleboard cover.
2) Draw the mount support according to the diagram on a piece of blueboard. When drawing the mount, use solid and dashed lines as illustrated in Fig. 1.
3) Use the width of the box to determine the width of the mount. The height of the mount should be 1/2 the height of the box.
4) Measure the full width of the cradleboard cover and 1/3 the height of the cradleboard cover to determine the measurements for the cross-section.
5) Use the flexible ruler to determine the shape of the bottom of the cradleboard cover. (see Fig. 2)
6) Cut out the tray and cross section with a sharp utility knife. Change the blade often. Cut along solid lines only.
7) Score the dashed lines using the utility knife or bone folder and straight edge. Be careful not to cut through the underside of the blueboard.
8) Score the two center lines on the underside of the blueboard to fold it in half.
9) Fold the blueboard along the scored lines. Be careful and work the blueboard gently to avoid splitting the board.
10) Make sure the cradleboard cover fits adequately into the mount. Pare away the blueboard with a utility knife or file so that the fit is close enough to prevent rolling or pitching of the object dur-

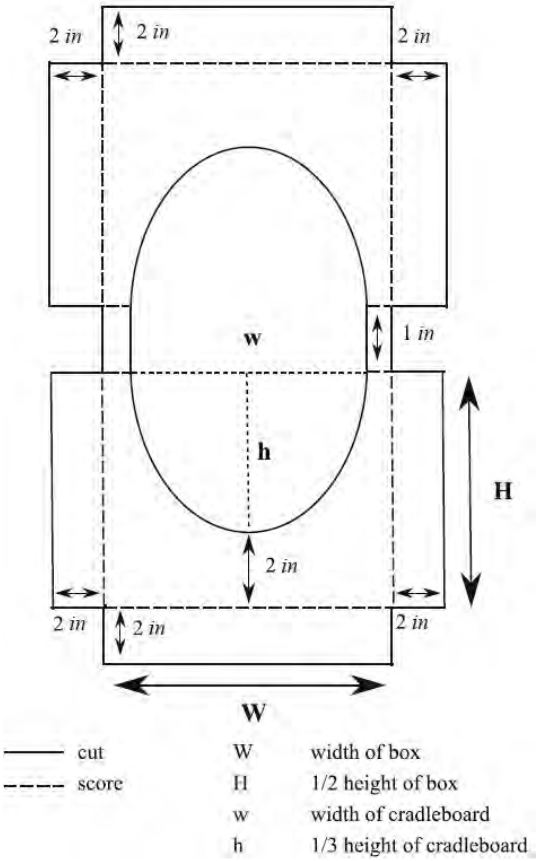


Fig. 1

Materials Needed:

- Flexible ruler
- Soft-Structure Tyvek
- Compass
- Polyester batting
- Scissors
- Sewing machine
- Thread and needle
- pH neutral blueboard, 1/4in
- metal straight edge
- Utility knife

ing transport

11) The cut surface of the blueboard can be rough. To avoid abrasion, line the curved area with cut pieces of Volara.
12) Determine the number of mounts needed based on the length of the cradleboard cover. Space the mounts equally down the box.
13) Using the hot glue gun on high setting, adhere the side and bottom flaps to the sides and bottom of the box.
14) If the cradleboard cover has a beaded tab with fringe, measure

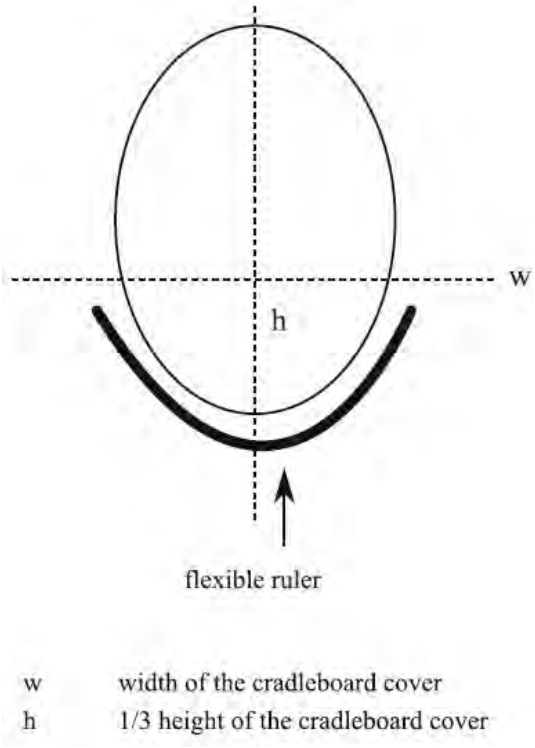


Fig. 2

Fig. 3

the length and width of the tab. Cut out a piece of polyethylene sheeting and cover it with soft-structure Tyvek using the tab's dimensions. (see Fig. 3)

15) Adhere the covered polyethylene pad to the bottom of the box underneath the tab.
16) Cut three to four long strips of soft-structure Tyvek to be used as slings for lifting the cradleboard cover from the mount.

Consulting a Conservator

If you have any concerns about the care of your object, consult a conservator in your area for further guidance. A conservator will be able to assess all the issues relating to its condition and long-term care. Conservators can also provide structural repairs, aesthetic compensation, and protective coatings for a range of materials.

Additional Resources and References

Minnesota State Historical Society, http://www.mnhs.org/preserve/conservation/index/html

National Park Service, Conserv-O-Grams, http://www.nps.org/museum/publications/conservation/cons_toc.html

Odegaard, Nancy and Alyce Sodongei, eds. *Old Poisons New Problems⁸Information and Resource Guide for Contaminated Cultural Materials in Museum Collections*– Altamira Press[₉₇₇2–

Odegaard, N., S. Carroll, and W. Zimmet. *Material Characterization Tests for Objects of Art and Archaeology*. London} Archetype Publications[₉₇₇₇

Ogden, Sherelyn, ed. *Caring for American Indian Objects⁷A Practical and Cultural Guide*. St. Paul, MN: Minnesote Historical Society Press, 2004.

Rose, C.L. and de Torres, A.R., editors. *Storage of Natural History Collections⁷Ideas and Practical Solutions³* Society for the Preservaiton of Natural History, 1992 (reprint 2002)

Conservation Suppliers

Conservation Resources International
7350-A Lockport Place
Lorton, Virginia 22079
Toll free: (800) 634-6932
www.conservationresources.com
Archival housing/storage supplies, photographic supplies, general

Gaylord Archival
P. O. Box 4901
Syracuse, NY 13221-4901
Toll Free: (800) 448-6160
www.gaylord.com
General conservation supplies, housing supplies

Hollinger Metal Edge, Inc.
9401 Northeast Drive
Fredericksburg, VA 22408
Toll Free: (800) 634-0491
www.hollingermetaledge.com
Archival housing/storage supplies

Light Impressions
100 Carlson Road
Rochester, NY 14610
Toll Free: (888) 222-2054
www.lightimpressionsdirect.com
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University Products
517 Main Street
P. O. Box 101
Holyoke, MA 01041
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www.universityproducts.com
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Talas
330 Morgan Ave
Brooklyn, NY 11211
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www.talasonline.com
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