

Buttons and Buttonholes

Unit: Science of Textiles and Manufacturing

Problem Area: Textile Construction Techniques

Lesson: Buttons and Buttonholes

- **Student Learning Objectives.** Instruction in this lesson should result in students achieving the following objectives:

- 1 Demonstrate button application.**
- 2 Demonstrate buttonhole construction.**

- **Resources.** The following resources may be useful in teaching this lesson:

E-unit corresponding to this lesson plan. CAERT, Inc. <http://www.mycart.com>.

Fox Chapel Publishing. *Illustrated Guide to Sewing*, 2nd ed. Design Originals, 2011.

"Making a Bound Buttonhole," *Simplicity Creative Group Teaching Tools*. Accessed Oct. 5, 2015. http://www.simplicity.com/Classroom/Tools/TT06_BoundButtonhole.pdf.

Reader's Digest Editors. *The New Complete Guide to Sewing: Step-by-Step Techniques for Making Clothes and Home Accessories*. The Reader's Digest Association, 2010.

Simplicity. *Simply the Best Sewing Book*. Simplicity Pattern, 2011.

Weber, Jeanette. *Clothing: Fashion, Fabric, and Construction*, 6th ed. Glencoe / McGraw-Hill, 2008.



■ **Equipment, Tools, Supplies, and Facilities**

- ✓ Overhead or PowerPoint projector
- ✓ Visual(s) from accompanying master(s)
- ✓ Copies of sample test, lab sheet(s), and/or other items designed for duplication
- ✓ Materials listed on duplicated items
- ✓ Computers with printers and Internet access
- ✓ Classroom resource and reference materials

■ **Key Terms.** The following terms are presented in this lesson (shown in bold italics):

- bar tacks
- bound buttonholes
- button
- button loops
- buttonhole stitch
- buttonhole twist
- buttonholes
- Chinese ball button
- flat button
- frog
- hand-stitched buttonholes
- lips
- machine-stitched buttonholes
- sew-through button
- shank button
- thread
- water-soluble marker
- zigzag stitch

■ **Interest Approach.** Use an interest approach that will prepare the students for the lesson. Teachers often develop approaches for their unique class and student situations. A possible approach is included here.

Buttons and buttonholes are visual fasteners used to secure garments. Bring a few garments to class that use buttons, and bring a variety of buttons. Ask the students how the look of each garment changes when you apply different buttons. Then ask the students if some of the buttons are inappropriate for any of the garments. If so, why? Brainstorm a list of questions to consider when choosing buttons for a garment. Facilitate a discussion.

CONTENT SUMMARY AND TEACHING STRATEGIES

Objective 1: Demonstrate button application.

Anticipated Problem: How are buttons properly attached?

I. Button application

A. A **button** is a small knob or disk sewn onto a garment to fasten or decorate. A button is often the fastener of choice for garments. Attaching a button to a garment requires choosing the correct thread type, too. Fortunately, a button is a strong fastener and is able to withstand intense pulling and straining. Buttons come in a variety of sizes, shapes, and colors. They have a flat surface with two or four pierced holes to facilitate attachment or a shank on the back for attachment purposes. Buttons are used as fasteners and as decorative touches.

B. Thread for button attachment

1. **Thread** is a group of textile fibers that, when twisted together, form a continuous filament strand for sewing. When attaching buttons, a person chooses thread appropriate for the fabric. Typically, thread used to apply a button is chosen to match the button, unless a contrasting color is desired for decorative purposes. Buttons are often sewn using a double strand of thread. Yet heavy garments may require heavy-duty thread for extra strength. Buttons can be sewn using general thread or silk thread.
 - a. To attach buttons to light- or medium-weight fabrics, it is best to choose a size D buttonhole twist or a general thread. **Buttonhole twist** is a strong, silk thread with a special twist for making hand-worked buttonholes, sewing on buttons, and decorative hand or machine stitching.
 - b. To prevent tangles when hand sewing, a person can run the thread through beeswax.
 - c. To attach buttons to knits, stretch, human-made, and most drip-dry fabrics, synthetic thread should be used. It is a polyester thread.
 - d. To select a needle, it is necessary to choose one that is long enough to easily pass through the thickness of the fabric.
 - e. To select the right size button, the pattern envelope should be consulted. Button size is determined by its diameter (width).

C. Sewing on a button

1. The steps to sewing on a button depend on the type of button being attached. Once a decision is made as to the button, the method of attachment can be determined. Buttons are one of the last items sewn onto a garment.
 - a. Buttons used for decorative purposes are usually sewn flat against the fabric.

- b. Buttons used as fasteners (which include a buttonhole) are sewn with a thread shank. (NOTE: Thread shanks are constructed by placing a straight pin between the button and the fabric and then passing a threaded needle through the pierced button and fabric several times. Next, the thread on the needle is wrapped around between the button and fabric several times. Then it is secured on the back of the fabric.)
 - c. Buttons are placed in accordance with the buttonhole. Buttonholes must be made before buttons are attached to the garment.
 - d. Buttons are sewn on the centerline pattern markings (center front, center back, cuff, collar, etc.)
 - e. Small buttons are typically placed closer together, but larger buttons may be spaced farther apart.
2. A **flat button** is a button with pierced holes on the face. **Sew-through button** is another name for a flat button. A flat button will have either two or four holes for attaching to a garment. A person would use the following basic application sequence to apply a flat or sewn-through button:
- a. Thread a needle so there are two equal lengths of thread.
 - b. Tie a knot at the end of the thread lengths. This provides double strands of thread when stitching.
 - c. Mark the button placement on the right side of the fabric. A **water-soluble marking tool** (an item that has marks that will “erase” with water) or a pin can be used to make this mark.
 - d. At the mark, take a few small stitches to secure the thread.
 - e. Place a toothpick, heavy pin, or similar object across the bottom of the button.
 - f. Stitch by bringing the needle up through one hole and then down through a second hole. If the button has four holes, bring the needle up through one hole, down through the second hole, up through the third hole, and down through the fourth hole.
 - g. Repeat the last step for five or six stitches.
 - h. Remove the pin, pick, or other item used to create the thread shank.
 - i. Lift the button from the fabric and firmly wind the thread around the stitches to make a thread shank.
 - j. Backstitch to secure.
3. A **shank button** is a button with a flat front (and no holes) and a hollow protrusion on the back through which thread is sewn for attachment to a garment. The shank may be made of metal or plastic. A shank button is a good choice for thick fabric, as the shank provides added depth to allow the button to easily pass through the buttonhole with room to spare. A shank button often gives a more formal look, as there is no visible stitching on the garment. A person would use the following basic application sequence to apply a shank button:
- a. Thread a needle so there are two equal lengths of thread.
 - b. Tie a knot at the end of the thread lengths. This provides double strands of thread when stitching.

- c. Mark on the right side of the fabric where the button is to be attached. A water-soluble marking tool or a pin can be used to make this mark.
 - d. At the mark, take a small stitch through the right side of the fabric and the shank to begin stitching the button.
 - e. Continue to pass the needle through the right side of the fabric and then the shank. Keep all stitches consistent in size and location.
 - f. Secure the shank to the right side by tightly pulling the threads. The button should now be flush with the fabric.
 - g. Then form a knot with the last stitch. To create this knot, leave a loop of thread open. Then place the needle through the loop and tighten it to form a knot. Repeat this step if necessary to secure it.
4. Some sewing machines are equipped to sew on 2- or 4-hole flat buttons. The machine manual can be consulted for details.

Teaching Strategy: Many techniques can be used to help students master this objective. Use VM-A and VM-B to review. Demonstrate how to sew a flat or sew-through button. Also, demonstrate how to sew a shank button. If desired, show the online lesson, “Sewing Basics: How to Sew a Shank Button” at <http://www.craftsy.com/blog/2014/12/how-to-sew-a-shank-button/>. If using the projected lesson, check comprehension through a discussion with the students. The use of the Internet is a good way for students to practice self-instruction and will be a life skill for their future. Assign LS-A.

Objective 2: Demonstrate buttonhole construction.

Anticipated Problem: What are various buttonhole applications?

II. Buttonhole construction

- A. **Buttonholes** are the openings (slots) in a garment that allow buttons to pass through, fastening one piece of the garment to another. They are the companions to buttons to create a fastening to open and close a garment. A variety of methods exist to make a buttonhole: bound, machine, hand-stitched, and frogs. Historically, anyone who sewed had to learn to make bound buttonholes. With the sewing machines of today, the majority of buttonholes are made by machine. This method is much easier to complete for all levels of seamsters and seamstresses. Well-constructed buttonholes are:
1. Flat and attractive
 2. Made with the grain of the fabric, unless a bias-cut garment or unusual design dictates otherwise
 3. An equal distance from the garment edge and in conjunction with the center-line or lap line
 4. Sized according to the button size, button thickness, and the fabric thickness
 5. The same length and width throughout the garment area

6. Spaced according to the size of the button and the garment design/function
 7. Applied to an area that has been properly interfaced
 8. Positioned so the button in a horizontal buttonhole can be secured and will ride slightly toward the garment edge
 9. Positioned so the button in a vertical buttonhole can be secured and will ride toward the top of the buttonhole
 10. Neatly slashed and have unsightly threads removed
 11. Consistent and have uniform “lips” or edges throughout
- B. Buttonhole placement
1. The placement of the buttonhole is shown on the pattern pieces. It is necessary to place the mark of the buttonhole on the right side of the fabric. Adjusting the length of the pattern would require the adjustment to the buttonhole placement. Buttonholes are generally spaced evenly between the top-marked buttonhole and the bottom-marked buttonhole. Buttonholes are positioned either horizontally—used on most jackets and dresses—or vertically—used on shirt bands. Buttonholes are sewn an appropriate distance from the edge of the fabric so the button does not extend beyond the edge of the garment when buttoned/fastened. Patterns are designed for a specific button size; it is stated on the back of the pattern envelope under “Notions.”
 2. The button/buttonhole placket and the centerline mark have been specifically designed with the stated button size in mind.
 3. To determine the length of the buttonhole for a specific button, it is important to add together the:
 - a. Diameter of the button
 - b. Thickness of the button
 - c. An additional $\frac{1}{8}$ inch to accommodate for fabric thickness
 - d. Exceptions to the formula are:
 - (1) Small buttons where less length is needed
 - (2) Dome or round buttons (To determine buttonhole size for a ball button, it is essential to place a string around the button, remove, and fold in half.)
 - (3) Fabric-covered buttons of heavy fabrics where more length is needed (To save wear and tear on buttonholes, they need to be large enough for buttons to slip through, but small enough to prevent unbuttoning during wear.)

C. Buttonhole types

1. **Bound buttonholes** are fabric-lipped buttonholes used in tailored garments. The bound buttonhole adds durability to the garment. The well-made bound buttonhole lies flat, and the **lips**—inner fabric edges—are set in a rectangle with perfectly square corners. A variety of methods exist for making bound buttonholes. A person would complete the steps described by <http://www.simplicity.com> to complete one method of bound buttonholes:
 - a. STEP 1: Mark the buttonhole position and length on the WRONG side of the fabric.
 - b. STEP 2: Cut a self-fabric strip for a patch on straight grain, measuring 2 inches wide and 1 inch longer than the measurement of the buttonhole. Mark a centerline along the length of the strip. With right sides together, baste the center of the strip along the buttonhole marking, extending ends $\frac{1}{2}$ inch beyond the markings.
 - c. STEP 3: On the wrong side, mark the lines $\frac{1}{8}$ inch above and below the buttonhole markings using a transfer pen.
 - d. STEP 4: Start sewing with a small machine stitch, sewing along one long side of the buttonhole, being careful to end stitching exactly at thread-traced ends. Bring thread ends to the wrong side and tie them in a knot.
 - e. STEP 5: Snip between the two stitching lines, and clip diagonally to the corners. Be careful not to cut through the machine stitching.
 - f. STEP 6: Pull the patch through the opening to the wrong side of the front. This opening should form a perfect rectangle. Roll the edges of the opening between your fingers until each seam is at the edge of the opening. Press so none of the patch shows on the outside.
 - g. STEP 7: To form a buttonhole lip, fold each long side of the patch over the opening so folds meet exactly in the center.
 - h. STEP 8: On the outside, whipstitch the buttonhole lips together along the fold lines, and press them in place. The whipstitches remain in place and are not removed until the garment is complete.
 - i. STEP 9: To secure the buttonhole lips and keep them from shifting, with the front right side up, fold it back out of the way until you can sew the end of the patch and the triangle (formed by clipping corners in STEP 5) together. Use small stitches to stitch across the base of the triangle, catching the patch. Trim the end to $\frac{1}{4}$ inch. Repeat on the other end.
 - j. STEP 10: Stitch the horizontal seam allowance of the buttonhole and patch together, just inside original stitching. Trim the patch to $\frac{1}{4}$ inch. Repeat this on the other seam.
 - k. STEP 11: Transfer the buttonhole markings to the wrong side of the front facing. Cut a bias patch of lightweight matching fabric 2 inches wide and 1 inch longer than the measurement of the buttonhole. Mark a centerline horizontally along the patch. With right sides together, place the patch on the facing, over thread-traced markings and baste.

- l. STEP 12: Use small stitches to begin sewing at the middle of one side, stitching a scant $\frac{1}{8}$ inch from the center basting and tapering stitching at the ends. Take one stitch across the end, pivot, and continue along the remaining side. Overlap stitches at the starting point, and remove the basting.
 - m. STEP 13: Slash between the stitching lines, being careful not to clip the stitching at the ends.
 - n. STEP 14: Pull the patch through to the wrong side. Gently snip along the bias of patch to create a sooth-slit opening. Press.
2. **Machine-stitched buttonholes** are buttonholes made with a zigzag stitch. A **zigzag stitch** is a reinforcing or decorative stitch pattern created by a series of short sharp turns or angles. All machine-stitched buttonholes have two straight lines of zigzag stitches with bar tacks. **Bar tacks** are a series of tight zigzag stitches used to reinforce stress areas on buttonholes, belt loops, pocket openings, fly front openings, military uniforms, and sportswear and gear. Some sewing machines have buttonhole attachments that are manually operated, while other sewing machines attachments are built in. It is always wise to do a sample buttonhole on a piece of scrap fabric. One would complete the following steps when making a machine buttonhole:
 - a. Mark the length of the buttonhole on the right side of the garment.
 - b. Follow the machine instructions to stitch the buttonhole.
 - c. Open the buttonhole.
 - (1) Place a pin across the ends of the buttonhole to prevent cutting through its ends.
 - (2) Use small scissors to cut open the center of the buttonhole. Cut from the center of the buttonhole in both directions.
 3. **Hand-stitched buttonholes** are buttonholes sewn by hand using a buttonhole stitch. A **buttonhole stitch** is a stitch that catches a loop of the thread on the surface of the fabric. At a right angle from the starting point, it is necessary to return the needle to the back of the fabric and then to take the needle and return it to the back of the fabric. This buttonhole is primarily used on light-weight or loosely woven fabrics.
 4. **Button loops** are fasteners that use a button with a thread or fabric loop instead of a buttonhole. The button loop is made of a narrow fabric tube or a thread. Button loops look best with ball or toggle buttons. Button loops may be set in the seam at the opening edge of a garment or part of a frog used as a decorative closure.
 - a. A **frog** (sometimes known as a Chinese frog) is an ornamental braiding that consists of a button and a loop. The frog is often matched with a Chinese ball button.
 - b. The **Chinese ball button** is a button made of cord, braid, or fabric tubing. When making the button, the size of the tubing should be kept proportionate.

Teaching Strategy: Use VM–C through VM–E. Go to the Simplicity Creative Group Teaching Tool: “Making a Bound Buttonhole” at http://www.simplicity.com/Classroom/Tools/TT06_BoundButtonhole.pdf. Print copies of the tool for use by the class. Bring five garments to class that have bound buttonholes. Divide the class into groups, and provide each group with the “Making a Bound Buttonhole” handout and a garment with a bound buttonhole. Have students work together to determine and find each step of the directions for bound buttonholes. As the groups have questions, ask and answer them as a class. When the students have completed the activity, ask them if they wear clothes today on which bound buttonholes would look good. Why or why not? Do any of the students own any garments with bound buttonholes? If your students have not viewed the “Bound Buttonholes: A Step-by-Step Tutorial” at <http://www.craftsy.com/blog/2014/11/how-to-sew-bound-buttonholes/>, they could do so now.

Some other tutorials available are “Sewing Basics: How to Sew a Button” at <http://www.craftsy.com/blog/2014/11/how-to-sew-a-button/> and “Sewing Basics: How to Sew a Shank Button” at <http://www.craftsy.com/blog/2014/12/how-to-sew-a-shank-button/>.

- **Review/Summary.** Use the student learning objectives to summarize the lesson. Have students explain the content associated with each objective. Student responses can be used in determining which objectives need to be reviewed or taught from a different angle. If a textbook is being used, questions at the ends of chapters may be included in the Review/Summary.
- **Application.** Use the included visual master(s) and lab sheet(s) to apply the information presented in the lesson.
- **Evaluation.** Evaluation should focus on student achievement of the objectives for the lesson. Various techniques can be used, such as student performance on the application activities. A sample written test is provided.

■ **Answers to Sample Test:**

Part One: Completion

1. bound
2. hand-stitched
3. Chinese ball buttons
4. shank
5. silk
6. button loop
7. thread

Part Two: True/False

1. F
2. F
3. T
4. F
5. F
6. T
7. T

Part Three: Short Answer

To determine the length of the buttonhole for a specific button, add together the:

- ◆ Diameter of the button
- ◆ Thickness of the button
- ◆ Plus $\frac{1}{8}$ inch to accommodate for fabric thickness

Buttons and Buttonholes

► Part One: Completion

Instructions: Provide the word or words to complete the following statements.

1. When making a tailored garment, it is recommended to construct _____ buttonholes.
2. When making buttonholes for delicate fabrics, it is recommended to make _____ buttonholes.
3. Decorative fasteners for garments include frogs and/or _____.
4. The button with no visible stitching on the exterior of the garment is a/an _____.
5. When sewing a button on heavier fabric, it is recommended to use _____ buttonhole twist thread.
6. Fasteners that use a button with a thread or fabric loop instead of a buttonhole are called a/an _____.
7. A group of textile fibers that, when twisted together, form a continuous filament strand for sewing is called _____.

► Part Two: True/False

Instructions: Write *T* for true or *F* for false.

- _____ 1. Construction of bound buttonholes is easier than machine-made buttonholes.
- _____ 2. A bar tack is a small knob or disk sewn onto a garment to fasten or decorate.
- _____ 3. Buttons are the fasteners of choice for many garments.
- _____ 4. A sew-through button has a flat front with a hollow protrusion on the back.



- _____ 5. A sew-through button used for decorative purposes needs a thread shank.
- _____ 6. Buttonholes are the openings (slots) in a garment that allow buttons to pass through, fastening one piece of the garment to another.
- _____ 7. Zigzag stitch is a reinforcing or decorative stitch pattern created by a series of short, sharp turns or angles.

► **Part Three: Short Answer**

Instructions: Answer the following.

How do you determine the length of the buttonhole for a specific button?

FLAT BUTTONS

A flat button or sew-through button is one with pierced holes on the face of the button. Flat buttons have either two or four holes for attaching to a garment.



SHANK BUTTON

A shank button is a button with a flat front (and no holes) and a hollow protrusion on the back through which thread is sewn for attachment to a garment. The shank may be made of metal or plastic. It is a good choice for thick fabric, as the shank gives added depth that allows the button to pass through the buttonhole with room to spare.



BUTTON PLACEMENT

Button placement locations are found on the pattern envelope instructions. Placement should be equal between the top button and the bottom button. Mark the button placement on the right side of the fabric. A water-soluble marking tool or a pin can be used to make this mark.



MACHINE-STITCHED BUTTONHOLE

Machine-stitched buttonholes are buttonholes made with a zigzag stitch. Built-in buttonholers and buttonhole foot attachments make it easier for all sewers to make ready-made buttonholes, such as these on the denim jacket. Can you point out the bar tacks on these machine-stitched buttonholes?



BUTTON LOOPS

Button loops are fasteners that use a button with a thread or fabric loop instead of a buttonhole. The button loop is made of a narrow fabric tube or a thread. The button loop looks best with ball or decorative buttons.



Button Attachment

Purpose

The purpose of this activity is to demonstrate the correct way to sew on a flat and a shank button.

Objective(s)

1. Review your class notes.
2. Review online sewing tutorials as needed.
3. Demonstrate flat button application.
4. Demonstrate shank button application.

Materials

- ◆ lab sheet
- ◆ class notes
- ◆ needle
- ◆ thread
- ◆ scissors
- ◆ flat and shank button assortment (two per person)
- ◆ 2 fabric pieces (6 inches × 6 inches)
- ◆ 8½" × 11-inch paper to mount samples
- ◆ tape or staples to mount samples

Procedure

1. Work independently.
2. Review your class notes about how to sew on buttons.



3. OPTIONAL: Go to the following Web sites to review button attachment:
 - a. “Sewing Basics: How to Sew a Button” at <http://www.craftsy.com/blog/2014/11/how-to-sew-a-button/>
 - b. “Sewing Basics: How to Sew a Shank Button” at <http://www.craftsy.com/blog/2014/12/how-to-sew-a-shank-button/>
4. Follow this procedure sequence:
 - a. Cut two pieces of fabric 6 inches × 6 inches.
 - b. On one piece of fabric, follow the steps to sew on a flat button.
 - c. On the second piece of fabric, follow the steps to sew on a shank button.
 - d. Attach each of your samples to separate pieces of 8½- × 11-inch paper, leaving room to write the steps you used to attach each button.
 - e. For each button attachment sample, write the steps in chronological (sequential) order that you used to attach the button to the fabric sample. Place the steps in the space you reserved on the 8½- × 11-inch paper on which you mounted your samples. Write legibly and concisely. Sign your name to each sample.
5. Post your samples, and/or participate in a discussion with the class about the process used for each sample.
6. Turn in your completed samples to your instructor.