

Zipper Applications

Unit: Science of Textiles and Manufacturing

Problem Area: Textile Construction Techniques

Lesson: Zipper Applications

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

- 1 Select the correct zipper for the garment.**
- 2 Use zipper tips and tools.**

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

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

Editors of Reader's Digest. *The New Complete Guide to Sewing*. The Reader's Digest, 2010.

Soto, Anne Marie, Martha Vaughan, and staff of the Simplicity Pattern Company. *Simply the Best Sewing Book*. Simplicity Pattern, 2011.

Warch, Constance. *Illustrated Guide to Sewing*, 2nd ed. Plycon, 2010.

Weber, Jeanette. *Clothing: Fashion, Fabrics, and Construction*, 4th 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):

- ▶ backstitching
- ▶ bar tack
- ▶ bottom stop
- ▶ buttonhole twist thread
- ▶ centered zipper
- ▶ chain
- ▶ couture
- ▶ exposed zipper
- ▶ fasteners
- ▶ fly front zipper
- ▶ handpicked zipper
- ▶ invisible zipper
- ▶ invisible zipper foot
- ▶ lapped zipper
- ▶ prickstitch
- ▶ pull tab
- ▶ separating zipper
- ▶ slider
- ▶ tape
- ▶ teeth
- ▶ topstitching
- ▶ top stop
- ▶ zipper coil
- ▶ zipper foot
- ▶ zippers

- **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:

Zippers are fasteners that secure portions of a garment and add shape and contour. Ask students to visualize the clothes in their closets and dressers. How many garments have zippers? Are the zippers all the same? Have students brainstorm a list that describes each type of zipper and list the differences between the fasteners. Record the list and differences on a whiteboard or projection device.

As the lesson progresses through each type of zipper, ask the students to list the garments they own with each type of zipper application. Then ask students to determine whether the zipper found in each of their garments is the correct zipper for that garment.

CONTENT SUMMARY AND TEACHING STRATEGIES

Objective 1: Select the correct zipper for the garment.

Anticipated Problem: What are various zipper applications? What is the best use of each zipper type?

I. Zipper applications

A. **Fasteners** are devices that hold two objects or parts together that are at times required to be separate, such as two pieces of a garment. Fastenings help create the “fit” of the garment and often add to its decorative design aesthetic. Numerous types of fasteners are used in clothing construction, including:

1. Belts, sashes, braces (suspenders), and cummerbunds
2. Buttons (including Chinese ball buttons made from bias fabric strips)
3. Eyelets
4. Grommets
5. Hook and eye
6. Laces
7. Snaps
8. Toggles
9. Velcro
10. Zippers

- B. **Zippers** are fastening devices made of two rows of metal or plastic teeth held together by a sliding tab that makes the teeth fit together or come apart. They are the most often used form of fastening device. A poorly installed or ill-fitting zipper application can ruin the “look” of a garment. A variety of zipper applications exist for zipper insertion, each with a specific use and primary task. It is important to take into consideration the fabric being used and the finished look for a garment when deciding upon the proper zipper application. Zipper parts include the chain, teeth, slider, pull tab, tape, top stop, and bottom stop.
1. The **chain** is the continuous piece formed when both halves of a zipper are meshed together.
 2. The **teeth** are the individual elements that make up the chain.
 3. A **slider** is the device that moves up and down the chain to open or close the zipper.
 4. A **pull tab** is the part of the slider held to move the slider up or down.
 5. **Tape** is the fabric part of the zipper.
 6. The **top stop** is two devices attached to the top end of a zipper to prevent the slider from coming off the chain.
 7. The **bottom stop** is a device attached to the bottom end of the zipper to prevent the slider from coming off the chain.
- C. A **lapped zipper** is a fastener that uses a fold of fabric to cover the zipper from one side and is then topstitched across the bottom and up one side of the zipper. A lapped zipper is generally found in a dress, skirt, and pants. This zipper type is generally located in the back center and in the left seam (when not located in the back center). The following basic application sequence is used for a lapped zipper:
1. Mark the length of the zipper in the seam.
 2. Stitch a seam below the zipper.
 3. Press the front edge of the opening to the wrong side, along the seam line.
 4. Press back the edge of the zipper opening to the wrong side. Press this side under $\frac{1}{2}$ inch.
 5. Pin the zipper right side up along the edge with a $\frac{1}{2}$ -inch seam allowance. Then place the folded edge along the zipper coil.
 6. Use the zipper foot to stitch close to the edge of the seam allowance from the bottom to the top of the zipper.
 7. Lay the $\frac{5}{8}$ -inch seam allowance over the zipper so the folded edge just covers the machine stitching.
 8. Pin the zipper in place.
 9. Topstitch across the bottom. Pivot and stitch to within 1 inch of the top.
Topstitching is stitching made on the outside of the garment. It is often used to highlight garment details (e.g., lapels, pockets, cuffs, collars, and appliqués).
 10. Leave the needle in place. Then move the zipper pull down. Next, continue to stitch to the top and pull the zipper up.

- D. A **centered zipper** is a fastener in which the teeth of the zipper are found in the center (e.g., where a seam would have been). Typically, there is an equal amount of fabric on each side of the centered zipper—found in the center back or front of dresses or skirts and on sleeves and accessories. The following basic application sequence is used to apply a centered zipper:
1. Measure and mark the length of the zipper.
 2. Machine-baste the seam from the top to the bottom of the zipper, and change to a regular stitch to end the seam.
 3. Press the seam open.
 4. Place the zipper facedown, with the top of the zipper at the edge of the seam and the coil centered in the seam. Use pins to hold the zipper in place.
 5. Extend one seam allowance, using the zipper foot and machine-baste along the stitch line of the zipper tape. A **zipper foot** is an attachment for the sewing machine that can be adjusted to position it to the right or left side of the needle. Machine-baste along the stitch line of the zipper tape.
 6. Extend the remaining seam allowance, and machine-baste the other extended seam allowance from the bottom to the top.
 7. Turn to the right side of the fabric, and lay it flat.
 8. Hand-baste from the bottom to the top until approximately $\frac{1}{4}$ inch from the top.
 9. Use the zipper foot attachment to topstitch on the outside along the sides and across the bottom of the zipper.
 10. Remove the basting.
- E. The **fly front zipper** is a fastening device concealed by a flap of material down one side of the garment's front opening. This zipper is generally found in trousers, jeans, pants, and skirts. Women's garments are generally lapped in a right-over-left direction, and men's garments are generally lapped in a left-over-right direction. The following basic application sequence is used to apply a fly front zipper:
1. The fly placket generally starts 2 inches from the crotch junction.
 2. Mark the location of the zipper.
 3. Stitch the front seam below the zipper.
 4. Press "under" the right-front and left-front seam allowances. These allowances will be different amounts; follow the pattern instructions.
 5. Pin the zipper along the left front seam allowance.
 6. Use the zipper foot attachment to topstitch close to the folded edge, stitching from the bottom to the top next to the zipper coil.
 7. Place the fabric's right sides together. With a zipper foot, stitch from the bottom to the top.
 8. Turn the fabric to the right side, and topstitch using as many rows of stitching as called for on the pattern.
 9. Add a bar tack at the bottom of the zipper. A **bar tack** is a row of stitches used to reinforce stress areas on a garment.

- F. An **invisible zipper** is a specialty fastener hidden in the seam of the garment. This special zipper typically requires the use of an invisible zipper foot. An **invisible zipper foot** is a specialty device in which the grooves on the bottom of the foot keep the coils of the zipper from sliding while being sewn. The following basic application sequence is used to apply an invisible zipper:
1. Attach the special invisible zipper foot to the machine.
 2. The seam is not stitched.
 3. Place the opened zipper upside down, and press the zipper coil flat. The **zipper coil** is the part of the zipper that has the teeth.
 4. Place the coil $\frac{5}{8}$ inch from the top edge of the garment.
 5. Place the zipper on the right side of the right back garment piece.
 6. Ensure the zipper coil is placed along the seam line.
 7. Pin the zipper in place.
 8. Attach the zipper to the garment by feeding the zipper coil into the right-hand groove of the zipper foot attachment. Stitch until the zipper head is reached. Repeat for the left side. Backstitch at the end of the zipper. **Backstitching** is using the reverse stitch on the sewing machine to secure the thread ends at the beginning and/or at the end of a stitching line. Adding a couple stitches secures the zipper.
 9. Close the zipper.
 10. Attach a regular zipper foot positioned to the left of the needle. Baste the seam below the zipper; stitch the seam below the zipper.
 11. To hold down the zipper, stitch the ends of it to the seam allowance only.
- G. A **handpicked zipper** is a fastener finished by hand stitching the zipper across the bottom and up both sides. A handpicked zipper is finished with a **prickstitch**, which is a decorative backstitch. It is usually selected for use on delicate fabrics (e.g., chiffon, lace, and velvet). The use of a prickstitch gives the garment a more couture look. **Couture** is high-end designer or custom-made clothing with hand-applied finishes. The following basic application sequence is used for a handpicked zipper:
1. Use a silk buttonhole twist or polyester cotton thread for this zipper. **Buttonhole twist thread** is a strong, thick silk thread used for decorative hand stitching.
 2. Complete the zipper applications as instructed in the pattern until the topstitching step.
 3. Take a stitch $\frac{1}{16}$ inch from the seam line at the bottom of the zipper.
 4. Backstitch onto the seam.
 5. Bring the needle up $\frac{1}{4}$ inch in front of the first stitch. Continue this back and forward stitching process until the zipper is stitched across the bottom and up the side.
 6. Pull the stitches tightly so they sink into the fabric.
- H. A **separating zipper** is a fastener that completely splits apart. It is also known as a jacket zipper or an open-end zipper. Separating zippers are used in coats,

jackets, athletic wear, and other miscellaneous garments and accessory items. Separating zippers are best sewn into the garment prior to attaching the facings and hems. The following basic application sequence is used for a separating zipper:

1. Machine-baste the zipper opening closed.
 2. Press the seam open.
 3. Place the closed zipper face down on the seam allowances, centering the chain over the seam.
 4. Extend the seam allowance and tape; machine-baste down the center of the tape.
 5. Keeping the pull tab up, machine-baste the free side of the zipper tape down.
 6. Hand-baste the seam allowances and zipper to the garment from the right side $\frac{1}{4}$ inch on either side of the seam allowance.
 7. Topstitch each side of the zipper just outside the basting line. Then remove the basting.
 8. Turn the top tape ends under at a slight slant to ensure they will not be caught in the teeth when the zipper is engaged.
 9. Turn under and slipstitch the hem edges to the zipper tape.
- I. An **exposed zipper** is a fastener used as a decorative design element in fashion in which the zipper tape is visible on the outside of the garment. Pattern directions must be followed to apply this zipper.

Teaching Strategy: Use VM–A through VM–F to review examples of zippers. Choose from a variety of YouTube or instructional videos appropriate for the skills of your class by using a Google key term search. Two excellent step-by-step videos are “How to Sew a Centered Zipper” at <http://www.howcast.com/videos/512577-How-to-Prepare-to-Sew-a-Centered-Zipper-Sewing-Machine/> and “How to Sew a Lapped Zipper” at <https://www.youtube.com/watch?v=peDZgkheXhc>. Assign LS–A.

Objective 2: Use zipper tips and tools.

Anticipated Problem: How are zippers prepared for insertion in the garment? How does a person choose the correct zipper, zipper foot, and thread for a specific garment?

II. Tips and tools

- A. It is important to buy a zipper appropriate for the garment fabric to be used.
 1. A lightweight polyester coil zipper is a good choice for a lightweight fabric.
 2. A heavy metal zipper is a good choice for a heavy coat that will “see a lot of use.”
- B. Preshrink the zipper by soaking it in hot water for a few minutes prior to use. Preshrinking ensures the zipper will not pucker the garment once it is washed.

- C. Zipper foot attachment
 - 1. When available, the standard zipper foot attachment should be used for the particular machine to ensure a more professional finish.
 - 2. When available, the invisible zipper foot attachment should be used for the particular machine to ensure a more professional finish and for ease of insertion.
- D. Buttonhole twist thread should be used for a more professional finish. Buttonhole twist is a thick multi-strand and polished thread used for decorative topstitching. It adds strength to the buttonhole opening. This thread is available at most fabric stores.
- E. The back of the pattern envelope provides additional information about zipper length and suggested type needed for the garment. Pattern instructions for the application of the zipper must be followed.

Teaching Strategy: *Many techniques can be used to help students master this objective. Use VM–G. Use various pattern envelopes, and have students read and determine specific zipper information for each pattern. Lead a discussion of selecting the best zipper application for a garment and fabric.*

- **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: Matching

- 1. e
- 2. b
- 3. f
- 4. a
- 5. c
- 6. d

Part Two: Completion

1. fly front
2. lapped
3. exposed
4. invisible
5. centered
6. handpicked

Part Three: Short Answer

1. A zipper foot is an attachment for the sewing machine that can be adjusted to position it to the right or left side of the needle. A standard foot is included with the sewing machine, or specialty foots can be purchased. The purpose of the zipper foot attachment is to allow movement to each side of the zipper to create a more professional finish.
2. It is important to use the back of the pattern to decide on the correct length and type of zipper to be used. The pattern should be used to find the fabric options for the pattern and then to choose a zipper that matches the fabric weight. The pattern envelope information details the suggested zipper application method and alerts the consumer to any specialty foot recommendations (e.g., invisible zipper foot) or thread for topstitching.

Zipper Applications

► Part One: Matching

Instructions: Match the term with the correct definition.

- | | |
|--------------------------|----------------------|
| a. prickstitch | d. bar tack |
| b. invisible zipper foot | e. separating zipper |
| c. zipper foot | f. tape |

- ____ 1. A fastener that completely splits apart
- ____ 2. A specialty device in which the grooves on the bottom of the foot keep the coils of the zipper from sliding while being sewn
- ____ 3. The fabric part of the zipper
- ____ 4. A decorative backstitch
- ____ 5. An attachment for the sewing machine that can be adjusted to position it to the right or left side of the needle
- ____ 6. A row of stitches used to reinforce stress areas on a garment

► Part Two: Completion

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

1. The zipper found most often in trousers is a/an _____.
2. The most common zipper application and the one used most often in ladies dresses, skirts, and pants is a/an _____ type.
3. The zipper used for a decorative fashion statement in which the tape is showing is a/an _____ type.
4. A dress zipper hidden in the seam is a/an _____ type.



LAPPED ZIPPER

A lapped zipper is a fastener that uses a fold of fabric to cover the zipper itself from one side and is then topstitched across the bottom and up one side of the zipper. Lapped zippers are generally found in dress, skirt, and pant garments.



CENTERED ZIPPER

A centered zipper is a fastener in which the teeth of the zipper are found in the center (e.g., where a seam would have been). Typically, there is an equal amount of fabric on each side of the centered zipper. This white leather jacket sleeve has a centered zipper. What accessories have centered zippers?



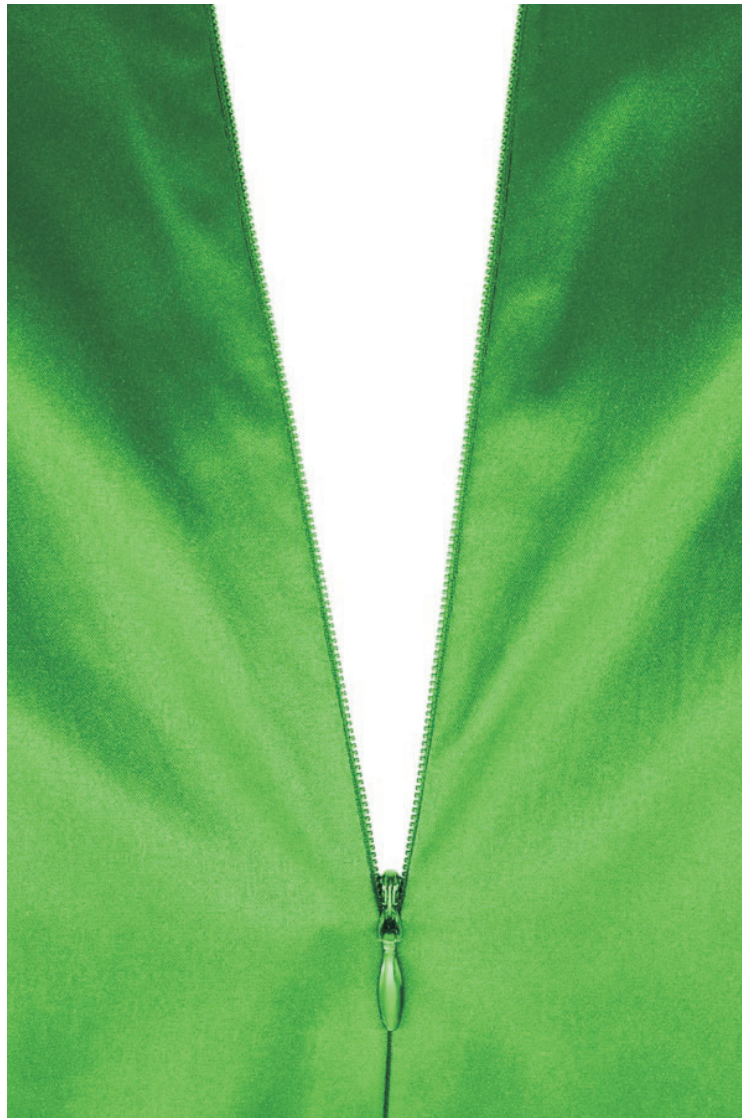
FLY FRONT ZIPPER

The fly front zipper is a fastening device concealed by a flap of material down one side of the garment's front opening. This zipper is generally found in trousers, jeans, pants, and skirts. Women's garments are generally lapped in a right-over-left direction, and men's garments are generally lapped in a left-over-right direction.



INVISIBLE ZIPPER

An invisible zipper is a specialty fastener hidden in the seam of the garment. This special zipper typically requires the use of an invisible zipper foot. Both the invisible zipper and the invisible zipper foot can be purchased at a local fabric store.



SEPARATING ZIPPER

A separating zipper is a fastener that completely splits apart. It is also known as a jacket zipper and/or as an open-end zipper. Separating zippers are used in coats, jackets, and miscellaneous other garments and items.



EXPOSED ZIPPER

An exposed zipper is a fastener used as a decorative design element in fashion that showcases the zipper tape. Other than skirts, where have you seen exposed zipper applications?



ZIPPER FOOT

A zipper foot is an attachment for the sewing machine that can be adjusted to position it to the right or left side of the needle. What type of zipper application is shown here?



Lapped Zipper Application

Purpose

The purpose of this activity is to practice lapped zipper application.

Objectives

1. Demonstrate a lapped zipper application.
2. Demonstrate the standard use of a zipper foot.

Materials

- ◆ lab sheet
- ◆ class notes
- ◆ sewing machine
- ◆ zipper
- ◆ zipper foot attachment
- ◆ wound bobbin
- ◆ pins
- ◆ scissors
- ◆ thread
- ◆ fabric piece (24 inches × 12 inches)

Procedure

1. Work independently to complete this lab sheet.
2. Review your class notes about lapped zipper application.
3. Follow these procedures in sequence:
 - a. Cut two pieces of fabric 24 inches × 6 inches.



- b. Set up your sewing machine. (Thread and insert the wound bobbin.)
 - c. Attach the zipper foot.
 - d. Mark the length of the zipper in the seam.
 - e. Stitch the seam below the zipper.
 - f. Press the front edge of the zipper opening to the wrong side along the seam line.
 - g. Press the back edge of the zipper opening to the wrong side. Press this side under $\frac{1}{2}$ inch.
 - h. Right side up: Pin the zipper along the edge with $\frac{1}{2}$ -inch seam allowance. Place the folded edge along the zipper coil.
 - i. Use the zipper foot to stitch close to the edge of the seam allowance from the bottom to the top of the zipper.
 - j. Lay the $\frac{5}{8}$ -inch seam allowance over the zipper so the folded edge just covers the machine stitching.
 - k. Pin the zipper in place.
 - l. Topstitch across the bottom, pivot, and stitch to within 1 inch of the top.
 - m. Leave the needle in place, and move the zipper pull-tab down. Then continue to stitch to the top, and pull the zipper up.
4. Ask your instructor to review your lapped zipper application. Make any adjustments, as recommended.
 5. Turn in your completed lab sheet and zipper application sample to your instructor.