

DYNAMICS OF CLOTHING I

UNIT III: *CONSTRUCTION PREPARATION*

TOPIC B: **SEWING TOOLS AND EQUIPMENT**

OBJECTIVE: The students will be able to choose and use appropriate sewing tools and equipment as they construct their projects.

CONCEPT: Having the correct type and size of sewing tools and equipment can mean the difference between frustration and success. It is always much easier to get the job done when the appropriate equipment is available.

COMPETENCIES:

1. Identify standard sewing tools and equipment used in clothing construction.
2. Select appropriate size and type of hand needles, machine needles, and sewing pins for fabric and purpose.
3. Review safety procedures for machines, sergers, and other sewing equipment.
4. Review sewing machine and serger parts and functions.
5. Thread sewing machine and serger correctly.
6. Demonstrate adequate control of sewing machine, serger, and other equipment.
7. Apply proper procedures for cleaning and maintaining sewing equipment.

ACTIVITIES/OPTIONS

SUPPLIES NEEDED

- | | |
|--|---|
| 1. Sewing Tools: Big and Small | A large variety of sewing tools
Copies of student list of supplies
needed/required |
| 2. Sewing Tools: Big and Small
WordSearch | Copies of student activity guide
(I-III-72) |
| 3. On Pins and Needles | Overhead transparencies
(I-III-78 to I-III-80) |
| 4. Sewing Safety | Copies of student activity guide
(I-III-82) |
| 5. Sewing Machine Parts and
Functions/Machine Control | Overhead transparencies or posters of
machine parts, threading sequence
Copies of student activity guides
(I-III-86 through I-III-93)
Sewing machines, needles, bobbins,
thread, fabric pieces |
| 6. <u>The Sewing Machine</u> Book and Video | Copy of book and video
Video player |
| 7. Sewing Equipment Bag | Copies of student activity guide
(I-III-94 and I-III-95) |
| 8. Serger Parts and Functions/
Machine Control | Overhead transparencies or posters of
machine parts, threading sequence
Copies of student activity guide
(I-III-96)
Sergers, thread, fabric pieces |
| 9. Serger Samplers | Copies of student activity guide
(I-III-97 and I-III-98) |
| 10. Sewing Equipment Operator's
Checklist | Copies of student activity guide
(I-III-99) |
| 11. M & M Day | Maintenance check-off list
Cleaning supplies: brushes, oil,
absorbent rags, paper towels, cleaning
solution, etc.
Machine instruction manuals
M & Ms |

ACTIVITIES/OPTIONS

Option 1: Sewing Tools: Big and Small

Follow the guidelines given on SEWING TOOLS: BIG AND SMALL and adapt this introduction to the types of sewing equipment required in your particular setting.

See pages 36-41 in Guide to Fashion Sewing in the Management Strategies and Construction Techniques binder.

Option 2: Sewing Tools: Big and Small WordSearch

Have the students complete the student activity guide, SEWING TOOLS: BIG AND SMALL WORDSEARCH.

Option 3: On Pins and Needles

Using the teacher background information and the overhead transparencies, explain to the students about the different kinds and sizes of pins and needles available along with information about the correct use of each type. It would be good to have samples of a large variety of types and sizes for the students to compare. The teacher might take the overhead transparency patterns and enlarge them to poster size to hang in the classroom for reference throughout the year.

See page 39 in Guide to Fashion Sewing in the Management Strategies and Construction Techniques binder.

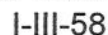
Option 4: Sewing Safety

Review the safety procedures/guides that need to be followed as various types of sewing equipment is used with the students. Have the students record these guidelines on the student activity guide, SEWING SAFETY.

Note: For liability purposes, the teacher should also be certain that every student in the class has completed the student activity guide and should require the students to keep them in their folder or tote tray. Then, if an accident should occur, the teacher has proof that the guidelines were presented for the students to follow. This should be done in every class.

Option 5: Sewing Machine Parts and Functions

Follow the guidelines provided on pages I-III-84 and I-III-93 for this activity. By using the teaching strategy outlined, two or three things can be taught simultaneously, and the students won't become so bored with the details of sewing machine parts and functions. Several stitching guides have been provided for use with this activity, along with suggestions for additional teaching aids. The machine diagram can be used as a student activity





follow the directions of the student activity guide, *SEWERS*, to practice on the sewing machines and the sergers. When the students are working on their samplers, the teacher and the students demonstrate their ability to thread the sergers.

Operator's Checklist

a copy of the SEWING EQUIPMENT OPERATOR'S
begin having the items listed checked off by the
tasks are completed.

ine Maintenance)

th, have an "M & M" day in one class to clean and care
in the textile technology lab. Rotate the day through all
he learns. When all of the machines have been
ed for, and checked off, the class gets M & Ms as a

ed to introduce the main considerations for care and
onstrate the how-tos, supply the equipment, and let
e work. The teacher should refer to the specific
s for the maintenance required. When the students
e work, have each student thread and operate the
ic, he/she has cared for during the maintenance activity.

WING MACHINE, 8664 Snow Mountain Drive, Sandy,
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ASSESSMENT/EVALUATION QUESTIONS

1. Identify standard sewing tools and equipment used in clothing construction.

MATCHING:

- | | | |
|----------|---|--------------------|
| <u>D</u> | 1. Pins used on a woven fabric | A. SEAM RIPPER |
| <u>E</u> | 2. Item used for marking fabric | B. SEAM GAUGE |
| <u>A</u> | 3. Item that helps you "unpick" a mistake | C. BALL-POINT PINS |
| <u>C</u> | 4. Pins used on a knit fabric | D. SHARP PINS |
| <u>B</u> | 5. Used as a measuring tool | E. TAILOR'S CHALK |

6. "Scissors" are better for cutting fabric than "shears."
A. True
B.* False
7. Rotary cutters may be used on any table or counter top.
A. True
B.* False
8. Shears have longer blades and bent handles so the blade will be flat on the table when cutting.
A.* True
B. False
9. The rotary cutter and mat is a fairly recent invention for use in the textile industry.
A.* True
B. False
10. The rotary cutter and mat are used instead of _____ for cutting out sewing projects.
A. Pins
B.* Scissors
C. Measuring tapes
D. Pinking shears
11. A serger is different than a conventional sewing machine. Put a check by each item listed that is different. (There are four (4) correct answers.)
A.* It takes more than one spool of thread to operate
B. It operates on only one spool of thread
C.* It has a small knife that trims the fabric as it sews
D.* It makes a nice finished edge on the fabric so it doesn't fray
E.* It uses a lot more thread and sews much faster
F. It uses a lot less thread and sews much slower



ASSESSMENT/EVALUATION QUESTIONS.

12. Sergers are used a lot in the sewing industry because:
 - A. They can sew so much faster
 - B. They can do several operations at once
 - C.* Both "a" and "b" are correct
 - D. They are so easy to thread
2. **Select the appropriate size and type of hand needles, machine needles, and sewing pins for the fabric and purpose.**
 1. Which of the following might cause skipped stitches?
 - A.* Needle inserted incorrectly
 - B. Upper tension too tight
 - C. Pulling the fabric when stitching
 2. The machine needle should always be threaded from:
 - A. The front to the back
 - B. The side with the short groove
 - C.* The side with the long groove
 3. If your fabric keeps snagging while you're sewing, the problem probably is:
 - A.* Your needle is dull or blunt and you should replace it
 - B. You are sewing too fast
 - C. Your machine isn't threaded right
 - D. Your needle is in wrong
 4. If your thread keeps breaking or your machine needle keeps coming unthreaded, it probably means that:
 - A. The needle is dull or blunt
 - B.* The needle is not in right
 - C. The machine isn't threaded right
 - D. You are sewing crooked
 5. A student is using a size 7 hand needle and finds that it is too small for the task assigned. The student should use a:
 - A.* Size 5, because the smaller the number, the larger the needle.
 - B. Size 10, because the larger the number, the larger the needle.
 6. Sharps are an all-purpose type of hand-sewing needle.
 - A.* True
 - B. False

ASSESSMENT/EVALUATION QUESTIONS

7. After needles have been removed from the package and used, they should be stored in:
 - A. An emery bag
 - B. A box with the pins
 - C.* A pin cushion
8. Pins and needles should not be left in an emery bag because:
 - A. They are not convenient
 - B. The points become blunt
 - C.* They will rust
9. When replacing a sewing machine needle it is important that the:
 - A. Groove side of the needle face the thread
 - B. Groove side of the needle face away from the thread
 - C. Needle be inserted to the top of the socket
 - D.* Both A and C answers are correct
10. If the needle is in the machine wrong, the result is:
 - A. Uneven tension
 - B.* Thread breaks
 - C. Puckered seams
11. If the fabric puckers and pulls at right angles to the stitching, it means:
 - A. The tension is too tight
 - B. You are sewing too fast
 - C.* The needle is blunt
 - D. None of the above
12. If your machine is skipping stitches, it could mean that:
 - A. The needle is not in correctly
 - B. The needle is not the right size for the fabric
 - C. The thread is not the right type for the fabric
 - D.* All of the above

ASSESSMENT/EVALUATION QUESTIONS

3. Review safety procedures for machines, sergers, and other sewing equipment.

1. You should ALWAYS quickly check your machine to make sure it is on the proper setting BEFORE you begin sewing.
A.* True
B. False
2. Always leave your area picked up and your machine turned off.
A.* True
B. False
3. A sewing machine is a safe piece of equipment when:
A. Safety rules are followed
B. Machines are kept in good working order
C. The operator remains alert during operation
D.* All of the above
4. When replacing the needle, the operator's feet should be resting on the foot control lightly.
A. True
B.* False
5. When cleaning the machine, the motor should be:
A. On
B. On, but feet should be off the foot control
C.* Off
6. When the machine is not in use:
A. Raise the presser foot and needle and turn off the motor
B.* Lower the presser foot and needle and turn off the motor
C. Lower the presser foot, raise the needle, and turn off the motor

4. Review sewing machine and serger parts and functions.

MATCHING:

Group 1:

- | | | |
|--------------|--|--------------------------|
| <u> B </u> | 1. Where the bobbin is located | A. STITCH LENGTH CONTROL |
| <u> A </u> | 2. Allows for a very small stitch or large stitch | B. BOBBIN CASE |
| <u> D </u> | 3. Needs to be in highest position every time you begin and end a seam | C. HAND WHEEL |
| <u> C </u> | 4. Provides a way of raising or lowering the needle manually | D. THREAD TAKE-UP LEVER |

ASSESSMENT/EVALUATION QUESTIONS

Group 2:

- | | | | |
|----------|----|---|-----------------------|
| <u>D</u> | 5. | Supports fabric during sewing; has lines on it and an oval hole where the needle goes through | A. PRESSER FOOT LEVER |
| <u>C</u> | 6. | Holds fabric against the feed system; snaps or screws on and off | B. TENSION CONTROL |
| <u>B</u> | 7. | Thread must be on one side of this metal piece | C. PRESSER FOOT |
| <u>A</u> | 8. | Is located on the back of the machine; lets you raise and lower the presser foot | D. NEEDLE PLATE |

Group 3:

- | | | | |
|----------|-----|---|--------------------------|
| <u>F</u> | 9. | Lowest and raises the feed-dog | A. BOBBIN |
| <u>B</u> | 10. | Holds the bobbin; allows the bobbin to turn and form the stitch; provides bobbin thread tension | B. BOBBIN CASE |
| <u>E</u> | 11. | Moves fabric along as you sew | C. BOBBIN WINDER SPINDLE |
| <u>C</u> | 12. | Holds the bobbin while winding it | D. BOBBIN WINDER TENSION |
| <u>A</u> | 13. | Holds the thread inside the machine | E. FEED DOG |
| <u>D</u> | 14. | Provides tension on the thread when winding the bobbin | F. FEED DOG CONTROL KNOB |

Group 4:

- | | | | |
|----------|-----|--|----------------------|
| <u>J</u> | 15. | Turns the light off and on | G. FOOT CONTROL |
| <u>I</u> | 16. | Stops needle movement during bobbin winding | H. HANDWHEEL |
| <u>H</u> | 17. | Controls the movement of the take-up lever and needle; can be controlled by power or by hand; should always be turned toward you | I. HANDWHEEL RELEASE |
| <u>G</u> | 18. | Controls how fast the machine sews | J. LIGHT SWITCH |

Group 5:

- | | | | |
|----------|-----|---|--------------------|
| <u>N</u> | 19. | Moves the needle to different positions: center, right, and left | K. NEEDLE |
| <u>M</u> | 20. | Fits around the feed dogs; the needle goes through it; has a seam guide on it | L. NEEDLE CLAMP |
| <u>L</u> | 21. | Holds the needle in place | M. NEEDLE PLATE |
| <u>K</u> | 22. | Carries the thread and pierces the fabric | N. NEEDLE POSITION |

ASSESSMENT/EVALUATION QUESTIONS

Group 6:

- | | | | |
|----------|-----|---------------------------------------|-----------------------|
| <u>P</u> | 23. | Holds fabric in place while you sew | O. POWER SWITCH |
| <u>R</u> | 24. | Allows the machine to stitch backward | P. PRESSER FOOT |
| <u>Q</u> | 25. | Lifts and lowers the presser foot | Q. PRESSER FOOT LEVER |
| <u>O</u> | 26. | Turns sewing machine on or off | R. REVERSE CONTROL |

Group 7:

- | | | | |
|----------|-----|---|--|
| <u>S</u> | 27. | Holds spool of thread in place | S. SPOOL PIN |
| <u>V</u> | 28. | Sets width of the zigzag stitch | T. STITCH LENGTH CONTROL |
| <u>T</u> | 29. | Sets the length of the stitch | U. STITCH PATTERN SELECTOR |
| <u>U</u> | 30. | Shows you which type of stitch the machine will sew | V. STITCH WIDTH CONTROL (ZIGZAG CONTROL) |

Group 8:

- | | | | |
|----------|-----|--|---------------------------|
| <u>Y</u> | 31. | Holds the thread in place on sewing machine | W. TAKE-UP LEVER |
| <u>X</u> | 32. | A place to cut the thread(s) without using scissors | X. THREAD CUTTER |
| <u>Z</u> | 33. | Adjusts the tension on the thread as required for a particular project | Y. THREAD GUIDES |
| <u>W</u> | 34. | Pulls thread from the spool | Z. THREAD TENSION CONTROL |

35. Which part of the machine moves the fabric through automatically?
- A.* Feed dogs
 - B. Spool pin
 - C. Tension control
 - D. Bobbin case

36. Where should both upper thread and bobbin thread be when you begin to sew to avoid tangles?
- A.* Back behind the presser foot
 - B. Under the feed dogs
 - C. Around bobbin winder
 - D. In front of the presser foot

37. What forms a stitch on the sewing machine?
- A. Bobbin winder tangles the thread
 - B.* Upper and bobbin threads lock
 - C. Bobbin thread goes through the needle
 - D. Single chain stitch from the top thread



ASSESSMENT/EVALUATION QUESTIONS

38. You should backstitch about how many stitches:
 - A.* 3-5 stitches
 - B. 15-20 stitches
 - C. 1-2 stitches
 - D. It doesn't really matter
39. Sergers have the capability of going really fast. Therefore you should:
 - A. Go slow enough to be in control at all times
 - B. Go as fast as the serger will
 - C. Go at a steady pace
 - D.* Both A and C answers are correct
40. When you have finished serging a seam, you should:
 - A. Cut the thread off right by the needle
 - B.* Leave a thread tail about 3 to 4 inches long
 - C. Leave a thread tail about 10 to 12 inches long
41. On very heavy fabrics, it is best to serge:
 - A. Both pieces at once
 - B.* One piece at a time
 - C. It won't make any difference because the serger is tough
42. As you guide the fabric through the serger with your fingers, it is important not to pull the fabric through or hold the fabric back.
 - A.* True
 - B. False
43. When you have finished with the serger, you should:
 - A. Leave the machine on and clean the serger area
 - B.* Turn the serger off and clean the serger area
 - C. Turn the serger off and leave your scraps by the machine
44. Sergers are great, but you have to be _____ when using them.
 - A. Fast
 - B. Mellow
 - C.* Cautious



ASSESSMENT/EVALUATION QUESTIONS

5. Thread sewing machine and serger correctly.

1. When turning the hand wheel on your sewing machine, you should always turn it:
A.* Toward you
B. Away from you
C. It doesn't matter
2. When bringing the bobbin thread up, you should hold the top thread and:
A. Thread the bobbin thread through the hole in the needle plate
B. Use the power peddle
C.* Turn the hand wheel one full rotation (needle goes all the way down and then back up), then gently tug on the top thread
D. Any of the above will work
3. A well-balanced tension produces a stitch that:
A. Pulls to the back
B. Is loose on the top for stretch
C. Has loops on the bottom side
D.* Appears the same on both sides
4. If stitches are NOT flat on both sides of fabric, or if there are loops on either side, you should check which of the following:
A. Presser foot
B. Bobbin
C. Stitch length
D.* Tension and threading
5. New serger threads can be tied to the old threads and pulled through without unthreading the machine.
A.* True
B. False
6. Threading a serger is _____ than threading a sewing machine.
A. Easier
B.* Harder
C. About the same
7. When tying new threads on the serger, it is best to make:
A. A large knot so it doesn't come undone
B.* A very small square knot about three inches from the end
C. A very small slip knot over the previous thread

ASSESSMENT/EVALUATION QUESTIONS

6. Demonstrate adequate control of sewing machine, serger, and other equipment.

1. Backstitching at the beginning and ending of your seams will secure them.
A.* True
B. False
2. You should backstitch about 3/4 to 1 inch at the beginning of every seam.
A. True
B.* False
3. To pivot stitch means to leave the needle in the fabric, lift the presser foot, turn the fabric, lower the presser foot, and then continue sewing.
A.* True
B. False
4. You should use the pivoting method when:
A. Sewing seams
B. Sewing hems
C.* Sewing corners

7. Apply proper procedures for cleaning and maintaining sewing equipment.

1. When replacing a sewing machine needle it is important that the:
A. Groove side of the needle face the thread
B. Groove side of the needle face away from the thread
C. Needle be inserted to the top of the socket
D.* Both A and C answers are correct
2. Lint in the machine should be:
A. Ignored—"it does no harm or no good"
B. Left to collect oil and help the machine run smoothly
C.* Removed regularly to prevent build-up
3. Each school sewing machine should be cleaned thoroughly:
A. Every day
B. Once a week
C.* Once a month
D. Once a year



ASSESSMENT/EVALUATION QUESTIONS

4. Your machine is making an unusual noise when you are stitching.
You should:
 - A. Check to see that the bobbin is in correctly
 - B. Check to see that the needle is all the way in and straight
 - C. Check the threading
 - D.* All of the above
5. To clean starch or sizing from a noncoated soleplate on an iron, rub the spots with:
 - A. #3 steel wool
 - B.* Paste made from scouring powder and water
 - C. Vinegar
6. If melted plastic or man-made (synthetic) fibers stick to the iron, one should NOT try to remove them by:
 - A.* Cooling the iron, rubbing the iron several times over wax paper, and removing any remaining residue with scouring powder.
 - B. Heating the iron until the residue softens, scraping it off as much as possible with a thin piece of wool, and then using scouring powder to remove any remaining residue.
 - C. Heating the iron until it is slightly warm, rubbing the iron several times over waxed paper sprinkled with salt, and then wiping it off.
7. To avoid mineral build-up, steam irons should be filled with:
 - A. Hot water
 - B. Tap water
 - C.* Distilled water
8. When making machine adjustments, the machine operator should:
 - A. Always call the clothing and textiles teacher
 - B.* Make only the adjustments for which training has been given
 - C. Try to make any adjustments that are needed
9. Whose responsibility is it to see that the sewing machine is kept in good condition?
 - A. The shop teacher
 - B. The clothing and textiles teacher
 - C. The student operators
 - D.* Both B and C answers are correct

ASSESSMENT/EVALUATION QUESTIONS

10. Which of the following problems could be fixed by the student operator?
- A. Improper threading
 - B. Blunt needle
 - C. Needle in backwards
 - D.* All of the above
11. Which of these practices might damage or reduce the efficiency of a sewing machine?
- A. Applying a drop of oil at each oiling point
 - B.* Leaving thread ends in the machine
 - C. Removing the throat plate to clean the underside of the machine
12. When adjusting the upper tension, the presser foot:
- A.* Should be in the down position
 - B. Should be in the up position
 - C. Can be in either the down or up position

