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ABSTRACT: Developed for the home economics teacher of mainstreamed visually impaired students, this guide provides clothing instruction lesson plans for the junior high level. First, teacher guidelines are given, including characteristics of the visually impaired, orienting such students to the classroom, orienting class members to the visually impaired, suggestions for effective teaching, and sources of assistance such as reading materials, organizations, and agencies. Next, the clothing instruction unit objectives and generalizations are given, followed by nine lesson plans. The topics of the lessons are selecting small sewing equipment; getting to know the sewing machine, caring for and operating the sewing machine; preparing the machine for sewing; fabric selection and terminology; using a commercial pattern; laying out and cutting out a pattern; and basic clothing construction. Each lesson includes objectives and generalizations, a pre- and posttest with an answer key, a list of learning activities (teacher lecture-demonstration, information sheets designed for all students and some especially for the blind, worksheets and worksheet keys, games), suggested films, books, kits, and other resources, and special notes to the teacher for presenting the lessons to visually impaired students. Concluding the package is a list of addresses for resource material and a bibliography which includes indication of availability in large type, braille, or record. (This package is one of a series of home economics instructional packages for use with the Visually Impaired. See note.) (JH)

******************************************************************************
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CLOTHING CONSTRUCTION:
AN INSTRUCTIONAL PACKAGE
WITH ADAPTATIONS FOR VISUALLY IMPAIRED INDIVIDUALS

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FOREWORD

This instructional package is one of a series of instructional packages developed as a part of a project entitled "Development of Home Economics Curriculum for the Visually Impaired". The focus of these instructional packages is to direct the home economics teacher toward successful integration of the visually impaired student into the regular classroom. Two concept areas were selected for the instructional packages because of their physical orientation; they were food preparation and clothing construction. Other areas of home economics with minimum physical orientation (such as nutrition) were not selected since these areas would require the least adaptations for the visually impaired students.

Curriculum was developed within these areas based upon content identified by curriculum guides to be appropriate for the junior high age level. The instructional packages include the following: teacher guidelines for successful mainstreaming, objectives, generalizations, pre-test, learning activities, post-tests, further activities, and suggested resources. The information sheets have two title placements. Titles in the upper left corner are for all students. Titles which are centered are for the visually impaired student only.

Lessons are planned for more than one period of instruction. Careful study of each lesson by the teacher will help determine:

1. The amount of material that can be covered in each class period.
2. Skills which must be demonstrated.
3. Supplementary materials which must be ordered.
4. Resource person that must be contacted.
ACKNOWLEDGMENTS

The project staff expresses appreciation for the valuable contributions made by many individuals to this project. Their comments and suggestions helped influence the content matter and the revisions which we feel make this instructional package very usable by home economics teachers.

We are especially grateful to Pamela Trudeau (Special Education Teacher) and the home economics students at the North Dakota School for the Blind. Without them, the field testing would not have been as meaningful. The field testing of these materials insured their appropriateness when teaching visually impaired students.

Special appreciation is given to the project consultants. They were Dr. Ruth P. Hughes, Head of Home Economics Education, and Dr. Sharon Redick, Assistant Professor of Home Economics Education, Iowa State University. Appreciation is extended to these individuals for the knowledge and encouragement given us.

We appreciate the support given by numerous state supervisors of home economics. These individuals also gave suggestions of possible reviewers from their respective states. The reviewers for the instructional package were: Ruth Anderson, Fargo North High School, Fargo, North Dakota; Mary Hoffman, Fargo South High School, Fargo, North Dakota; Rochelle Thorton, Bow High School, Chicago, Illinois; and Jackie Yep, Department of Home Economics, Iowa State University, Ames, Iowa. We thank them for their comments and ideas for revisions.

The support and advice given by members of our Advisory Committee is greatly appreciated. They provided a broad viewpoint and varied expertise in the area of mainstreaming the visually impaired. The committee members were: Myrna Olson, Ed Christianson, Jane Messinger, Ruth Hill, Kathy Risk, Susan Otto, Betty Bender, Dean Stenehjem, Threese Clark, and Majore Lovering.

Appreciation is also extended to Jean Thomas, Assistant CETA Administrator for the State of North Dakota. Her guidance was most helpful in the implementation of this project.

We thank Lois Schneider for her part in the initiation and development of this project.

We appreciate the help of Carol Kelley, Graphics Designer, Instructional Communications, for the illustrations and drawings used in this publication.

We further wish to acknowledge the invaluable contributions of the project secretary, Karen Blegen, and the project brailler, Carol Strinden, who typed and brailled the many drafts and revisions of these materials.
GUIDELINES FOR TEACHERS OF MAINSTREAMED VISUALLY IMPAIRED STUDENTS

Who Are the Visually Impaired?

The term visually impaired has two major categories: educationally blind and partially sighted.

Those students whose visual acuity is too low for reading print or whose vision is not the primary channel for education are classified as educationally blind. Educationally blind children may need to rely solely on Braille or recorded materials as their primary mode of learning. However, they may have some usable vision for shape and form perception. Most blind students can move around readily in familiar surroundings, either because they have light perception or recognize familiar objects. However, most educationally blind children will need to have some orientation and mobility training in unfamiliar surroundings.

Partially sighted students have limited vision after correction. These students are able to and should be encouraged to use vision as their major avenue of learning. However, they may need to use large print and/or magnification of some type.

Characteristics of the Visually Impaired

One commonality between every child is that of individuality. The visually impaired student has the same types of needs, joys, fears, and apprehensions as any other student his age. Therefore, it would be incorrect to assume that all unacceptable behavioral characteristics of the visually impaired student are caused by his visual loss.

The October 1963 issue of "The New Outlook for the Blind," published by the American Foundation for the Blind, featured the following quotation from Pierre Villey: "Before anything else, it is necessary to establish the fundamental truth that blindness does not affect the individuality, but leaves it intact... no mental faculty of the blind is affected in any way."

Meeting the Visually Impaired Student

If at all possible, you should meet the visually impaired student prior to the first day of class. This meeting might be with the school counselor or possibly a home visit with the student and his/her parents. Become as familiar as you can with the student's impairment and what, if any, implication it will have on his learning.

Orienting the Visually Impaired Student to the Classroom

After the initial meeting with the visually impaired student, a tour of the home economics classroom would be helpful to familiarize the student with the room surroundings. This should be done when no other class members are in the room. One of two methods may be used:

1. You may offer your arm and become a sighted guide.

2. The student may prefer to travel around the room alone.

If the student wants a tour, start at the right wall, letting the student "trail" the back of his/her right hand over and around objects. Do this for the kitchen area as well as the classroom. In a large room, it may be easier to learn to know one wall at a time, returning each time to the door. It may also be advisable to verbally describe the room indicating total placement.

Each room has certain landmarks such as a clock, the sound of the refrigerator, or warmth of the sun through the window. Sound, smells, and irregularities all help the visually impaired student orientate him/herself to the room.

Orienting Class Members to the Visually Impaired Student

If at all possible, orientate the other class members when the visually impaired student is not present. Inform the class members of the visually impaired student's limitations and capabilities. Allow time for a question-answer period with the class members. You might also want to distribute the pamphlet "What Do You Do When You See a Blind Person".

Suggestions to Help Make Your Teaching More Effective

1. First and foremost remember that the visually impaired student is an individual! Respect him/her as a person in his/her own right.

2. Talk directly to the student, never with your back to him/her or directing your conversation to another part of the room. Your speaking voice need not be louder than normal, but speak distinctly. Remember, he/she is visually impaired, not hearing impaired.

3. Let the student know when you come into the room and when you are leaving.

4. Treat him/her as you would a sighted person. Guard against speaking about him/her or ignoring him/her in conversations with others.
5. When teaching, be organized and consistent in your explanation.

6. If you rearrange materials or equipment, make sure you advise the learner of the changes.

7. Ask the student for ideas or adaptations.

8. Allow the student enough time to succeed in his/her activities.

**When Teaching a Lesson**

1. Tell what you are going to do, then in an orderly step by step process, proceed, using words to build a clear mental image of word picture of the materials and equipment to be used and what the end result should be.

2. Use specific words and directions. Expressions such as "over here," "over there," or "right here" are too vague and should be used sparingly. Say "let me show you" and guide him/her to it, or "let me take your hand" and place it on the object. Or say "to your right," "to your left," or tap the object and say "it's here," if he/she can determine the direction of the sound. A visually impaired person must rely on his/her sense of smell, touch and sound to guide him/her, so descriptions and directions should relate to these senses when possible.

3. Allow enough time to learn the task. Don't rush through the lesson.

**How Much Help Should You Give the Visually Impaired Student?**

1. Let him/her do as much for him/herself as possible. If he/she develops techniques suited to his/her needs, let him/her continue to use them as long as they are safe.

2. Try not to over-protect. However, do not leave a learner totally alone until the technique has been mastered. This avoids frustration and possible accidents.

**Where to Find Help**

1. Braille or large print textbooks are usually available through the State Department of Public Instruction. However, allow about 2 months from the time you send them the regular textbook until the braille or large print textbook is returned to you.

2. Large print books for the partially sighted are available at the cost of 10c/page through Graphic Systems, Inc., 140 Bradford Avenue, Pittsburgh, Pa. 15025. In many states, government funds defray the additional cost of a large print edition over a standard print book.
Search your community for a braillist. This person could braille information sheets and tests as well as translate braille materials for you.

If there is not a braillist in your community, you may have to rely on other means for giving written information and testing your visually impaired student. Cassette tapes have been successfully used for this. Another possibility would be a buddy system where a normally-sighted student would read or assist the visually impaired student.

The American Printing House for the Blind manufactures a machine called APH Variable Speech Control Module. This machine is very useful for the visually impaired students who might prefer to listen to recorded materials rather than read.

The American Thermoform Corporation manufactures a Thermoform Brailon Duplicator for duplicating braille materials.

Suggested Reading Materials


3. "Can I Say 'See' and 'Look'?". Available from the Vision Team, 6031 Eden Prairie Road, Minnetonka, Minnesota 55343. ($1.00).


Resources - Private Agencies

1. American Foundation for the Blind, Inc.
   Chicago Field Office
   Suite 738
   500 North Michigan Avenue
   Chicago, Illinois 60611
   (Provides print and braille catalog of aids and devices for sale).

   Post Office Box 6085
   1839 Frankfort Avenue
   Louisville, Kentucky 40206
   (Official schoolbook printery for the blind in the U.S.)
3. Blind Service Association, Inc.
   127 North Dearborn
   Chicago, Illinois 60602
   (Records textbooks on tapes and discs)

4. Braille Transcribers Club of Illinois, Inc.
   Suite 1515
   30 West Washington Street
   Chicago, Illinois 60602
   (Provides volunteer transcribing of textbooks in braille)

5. Catholic Guild for the Blind
   67 West Division Street
   Chicago, Illinois 60602
   (Transcribes materials in braille, large type, and cassette)

6. Educational Tape Recordings for the Blind
   10231 South Kedzie
   Evergreen Park, Illinois 60640
   (Tapes textbooks)

7. Johanna Bureau for the Blind and Visually Handicapped
   Suite 540
   22 West Madison Street
   Chicago, Illinois 60602
   (Transcribes material in braille, tape recording, and large type)
Unit Objectives

I. The student will be better able to safely and correctly operate a sewing machine.

II. The student will be able to satisfactorily construct and individualize a backpack.

III. The student will be aware of the importance of performance standards and self-expression as related to clothing construction.

Unit Generalizations

I. The selection, use, and care of sewing equipment and materials influences the quality of workmanship and the satisfaction derived from sewing.

II. Decisions regarding choice of sewing equipment and materials vary with the needs of the individual and the type of construction to be done.

III. The proper care and use of equipment and materials extends their life and efficiency.

IV. Safety is established when precautions are practiced.

V. Evaluating one's own sewing can contribute to improved skill in sewing construction and increased ability to select ready-made articles.

VI. Satisfaction and pride achieved during the construction and individualization of a sewing project tend to influence one's attitude toward future sewing.

Lesson Outline

I. Objectives

II. Generalizations

III. Pre-test

IV. Learning Activities

V. Post-test

VI. Further Activities

VII. Suggested Resources
Individual Lessons

I. Lesson 1: Selecting Small Sewing Equipment

A. Objectives:

1. The student will be better able to identify small sewing equipment and the proper procedure for their use.

2. The student will be better able to apply care procedures for small sewing equipment.

3. The student will be better able to apply safety practices in the use of small sewing equipment.

B. Generalizations:

1. The selection, use and care of sewing equipment influences the quality of workmanship and the satisfaction derived from sewing.

2. Decisions regarding choice of sewing equipment vary with the needs of the individual and the type of construction to be done.

3. The proper care and use of equipment extends the life and efficiency of the device.

4. Safety is established when precautions are practiced.

C. Pre-test

D. Learning Activities:

1. "Sew 'n Stuff" Display: Table display of small sewing equipment essential to the beginning sewer. Discuss names, uses, approximate cost, and quality of each item.

2. Information Sheet: Picture, description, use, care, and safety precautions of small sewing equipment

3. Information Sheet: (Visually impaired student) "Tips for Equipping a Sewing Kit"

4. "Concentration": Game to familiarize students with the name and use of small sewing equipment

E. Post-test
F. Further Activities:

1. Talk with a person who sews as to which items of small sewing equipment he or she considers essential in sewing. Find out use and safety precautions of each.

2. Purchase or assemble a sewing kit. Equip it with all necessary sewing equipment. Your teacher will provide you with a list of the necessary equipment.

* Notes to the Teacher:

1. Students will practice using small sewing equipment during the clothing construction lab.

2. A psychomotor checklist found in Lesson 9 will help you evaluate how well each student applies care procedures and safety practices while using small sewing equipment.
<table>
<thead>
<tr>
<th>NAME</th>
<th>USE</th>
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</tbody>
</table>
SELECTING SMALL SEWING EQUIPMENT

**Pre-test Key**
40 Possible Points

<table>
<thead>
<tr>
<th>NAME</th>
<th>USE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1: SEAM GAUGE</td>
<td>Measuring short distances</td>
</tr>
<tr>
<td>2: SCISSORS</td>
<td>Snipping threads, trimming, clipping</td>
</tr>
<tr>
<td>3: TAPE MEASURE</td>
<td>Taking body measurements, measuring width of fabric, placing pattern on straight of grain</td>
</tr>
<tr>
<td>4: SHEARS</td>
<td>Cutting out sewing project</td>
</tr>
<tr>
<td>5: NEEDLES</td>
<td>Regular hand sewing</td>
</tr>
<tr>
<td>6: THIMBLE</td>
<td>Protecting fingers and pushing needle through fabric</td>
</tr>
<tr>
<td>7: STRAIGHT PINS</td>
<td>Pinning pattern on fabric, pin basting</td>
</tr>
<tr>
<td>8: SEAM RIPPER</td>
<td>Remove inaccurate or incorrect stitching</td>
</tr>
<tr>
<td>9: NEEDLE THREADER</td>
<td>Aid to thread needle</td>
</tr>
<tr>
<td>10: PIN CUSHION</td>
<td>Holds pins and needles</td>
</tr>
<tr>
<td>Name and Picture</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>Tape Measure</td>
<td>60 inches long firm plastic, non-stretchable</td>
</tr>
<tr>
<td></td>
<td>material</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Seam Gauge</td>
<td>6 inches long sliding marker made of heavy plastic or metal</td>
</tr>
<tr>
<td>Straight Pins</td>
<td>Small, pointed piece of wire</td>
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<td>Name and Picture</td>
<td>Description</td>
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</tbody>
</table>
| Emery            | - Strawberry-shaped cushion  
|                  | - Filled with fine metal powder | Sharpening needle and pins  
|                  |                                   | Cleaning needles and pins  |
| Scissors         | - 6 inches or less in length  
|                  | - Narrow, pointed blades  
|                  | - Ring handles | Snipping threads  
|                  |                                   | Trimming  
|                  |                                   | Clipping  |
| Tailor's chalk   | - Flat  
|                  | - Square  
|                  | - Colors of white, blue, brown, yellow  
|                  | - May be chalk or wax  
|                  | - May come in pencil form  
|                  | - Leftover soap pieces may be used instead of chalk | Transferring pattern markings  |
|                  |                                   | Avoid pressing hard  
|                  |                                   | or chalk may break  
<p>|                  |                                   | Waxed tailor's chalk leaves oily mark except on wool |</p>
<table>
<thead>
<tr>
<th>Name and Picture</th>
<th>Description</th>
<th>Use</th>
<th>Care and Precaution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon Paper</td>
<td>- Paper coated with white or colored wax</td>
<td>- Transferring pattern markings, use with tracing wheel</td>
<td>- Store tracing paper in envelope, select color of carbon that most nearly matches fabric, yet makes visible markings</td>
</tr>
<tr>
<td>Tracing wheel</td>
<td>- Small wheel with handle</td>
<td>- Used with carbon paper to transfer pattern markings</td>
<td>- Trace lightly to avoid damage to fabric, pad table with magazines so tracing wheel does not damage table surface</td>
</tr>
<tr>
<td>Needle</td>
<td>- Slender, sharp instrument, eye for thread, crewel—long eye, sharp—small, round eye</td>
<td>- Crewel for embroidery or regular hand sewing, sharp for hand sewing</td>
<td>- Keep needles in pin-cushion or package, do not leave needles in emery as they will rust</td>
</tr>
<tr>
<td>NAME AND PICTURE</td>
<td>DESCRIPTION</td>
<td>USE</td>
<td>CARE AND PRECAUTION</td>
</tr>
<tr>
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<td>---------------------</td>
</tr>
<tr>
<td>Thimble</td>
<td>Fits middle finger, clear-cut dents on outside, made of metal or hard plastic</td>
<td>Protecting finger, pushing needle through fabric</td>
<td></td>
</tr>
<tr>
<td>Needle threader</td>
<td>Small piece of metal with a wire loop attached</td>
<td>Wire loop is passed through needle, the thread is passed through the loop and the threader is removed, pulling the thread with it</td>
<td></td>
</tr>
<tr>
<td>Pin cushion</td>
<td>Made of sponge or stuffed material</td>
<td>Holds needles and straight pins</td>
<td></td>
</tr>
<tr>
<td>Name and Picture</td>
<td>Description</td>
<td>Use</td>
<td>Care and Precaution</td>
</tr>
<tr>
<td>------------------</td>
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<td>---------------------</td>
</tr>
<tr>
<td>Seam ripper</td>
<td>Flat handle with a sharp point on one end</td>
<td>Remove inaccurate or incorrect stitching</td>
<td>Be careful to remove only stitches. Do not tear fabric</td>
</tr>
<tr>
<td>Shears</td>
<td>Long cutting blades bent or straight handles</td>
<td>Cutting out sewing project</td>
<td>Keep for sewing purposes only. Keep blades sharp; dull shears chew rather than cut material. Lay on table instead of material</td>
</tr>
</tbody>
</table>
"Tips for Equipping a Sewing Kit"

Here are some tips for you to consider when equipping a sewing kit for yourself. These are just some ideas. You may be able to "invent" other aids to suit your particular needs.

Adaptations: (To be done by a sighted person)

1. One way to keep track of thread colors is to place each spool in a plastic pill bottle and label with the color in braille or large type. You might wish to use a special code to indicate a specific color thread goes with a particular fabric. Make sure you always replace the spool of thread in the pill bottle after using it.

2. Plastic pill bottles can also be used for storing bobbins, snaps, hooks and eyes and other small equipment. Label these in braille or large type. Again remember to replace unused items in the correct bottle.

3. Here's a helpful method for marking your cloth or plastic tape measure. Mark each inch line with a staple placed vertically and each foot line with a staple placed horizontally. Mark the entire tape in this manner. The tape measure can then be used with accuracy from either end.

4. A yard stick can be marked using a short notch at each inch line and a longer notch at each foot line.

There are some items on the market which you may find good additions to your kit.

1. Self-threading needles have a small slot above the eye of the needle through which you pull the thread. This eliminates the problem of trying to fit the thread end through the tiny needle eye.
2. When you purchase a seam ripper, look for one that has a plastic bubble on the short prong. This serves as a safety device which protects your fabric and fingers from unnecessary puncturing.

3. One seam gauge available has a small catch at the 5/8" mark and each inch mark thereafter. One end of this particular gauge is 5/8" wide and can be used for measuring also.

4. A wrist style pin cushion will assure you of always knowing where to put your straight pins. No more searching around for a misplaced pin cushion!

5. Surgical shears are a good addition to your kit. Because the handles are bent at a 45° to the blade, it will be easier to cut your fabric without lifting it from the cutting table. By keeping the fabric and pattern flat, your cutting will be more accurate. Another good feature on the surgical shears is the protective tips on the points of the blades.
SELECTING SMALL SEWING EQUIPMENT
CONCENTRATION GAME

Name __________________
Class __________________
Date __________________

After being blind-folded, handle the items of small sewing equipment for 30 seconds; return to your seat and record the correct names of as many sewing items as you remember.

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11. 
12. 
13. 
14. 
15. 
SELECTING SMALL SEWING EQUIPMENT
CONCENTRATION GAME KEY

1. SEAM GAUGE
2. TAPE MEASURE
3. SHEARS
4. NEEDLES
5. EMERY
6. TAILORS CHALK
7. THIMBLE
8. TRACING WHEEL
9. STRAIGHT PINS
10. CARBON PAPER
11. SEAM RIPPER
12. NEEDLE THREADER

NON-SEWING ITEMS
1. MEASURING CUP
2. SPATULA
3. PARING KNIFE
SELECTING SMALL SEWING EQUIPMENT

POST-TEST

NAME ___________________  
CLASS ___________________ 
DATE ___________________

40 POSSIBLE POINTS

FILL IN THE BLANK WITH THE NAME OF THE ITEM OF SMALL SEWING EQUIPMENT WHICH PERFORMS THE FOLLOWING TASK.

1. A ___________ holds pins and needles.

2. To remove inaccurate or incorrect stitching, a sewer would use a ___________.

3. ___________ are used to pin a pattern to the fabric or to temporarily hold two pieces of fabric together.

4. A metal device which is used to measure short distances is known as a ___________.

5. A ___________ is used to snip threads, trim seams, or clip fabric.

6. To take body measurements, measure width of fabric, or place pattern on the straight grain, you would use a ___________.

7. The pointed object used in hand sewing is known as a ___________.

8. To protect your finger when doing hand sewing, you would wear a ___________ on the middle finger of your sewing hand.

9. A helpful aid for threading needles is a ___________.

10. ___________ are used for cutting out your sewing project.

FILL IN THE BLANK WITH THE NAME OF THE ITEM OF SMALL SEWING EQUIPMENT WHICH PERFORMS THE FOLLOWING TASK.

1. A **PIN CUSHION** holds pins and needles.
2. To remove inaccurate or incorrect stitching, a sewer would use a **SEAM RIPPER**.
3. **STRAIGHT PINS** are used to pin a pattern to the fabric or to temporarily hold two pieces of fabric together.
4. A metal device which is used to measure short distances is known as a **SEAM GAUGE**.
5. A **SCISSORS** is used to snip threads, trim seams, or clip fabric.
6. To take body measurements, measure width of fabric, or place pattern on the straight grain, you would use a **TAPE MEASURE**.
7. The pointed object used in hand sewing is known as a **NEEDLE**.
8. To protect your finger when doing hand sewing, you would wear a **THIMBLE** on the middle finger of your sewing hand.
9. A helpful aid for threading needles is a **NEEDLE THREADER**.
10. **SHEARS** are used for cutting out your sewing project.
II. Lesson 2: Getting to Know the Sewing Machine

A. Objective:

1. The student will be better able to identify and explain the purpose of the principle parts of the sewing machine.

B. Generalization:

1. Knowledge of the parts of the sewing machine, the function of each sewing machine part, and how to operate the sewing machine makes sewing easier, more enjoyable and more efficient.

C. Pre-test

D. Learning Activities:

1. Information Sheet: Name and functions of sewing machine parts

2. Lab: Working in pairs, students identify parts on the sewing machine. Students quiz each other until each knows the name and function of each part.

3. "Wind Up To Sew": Puzzle to identify the name and function of sewing machine parts

4. Word Search: Game to review the names and function of sewing machine parts

E. Post-test

F. Further Activities:

1. Identify machine parts to someone who sews. Ask for difference in terminology.

G. Suggested Resources:

GETTING TO KNOW THE SEWING MACHINE

40 POSSIBLE POINTS

MATCH THE FOLLOWING SEWING MACHINE PARTS WITH THEIR FUNCTION.

___ 1. Presser Bar Lever  A. Holds fabric against feed dog
___ 2. Presser Bar           B. Covers feed dog mechanism
___ 3. Presser Foot          C. Transfers thread from spool to bobbin
___ 4. Feed Dog              D. Controls movement of take-up lever and needle
___ 5. Throat Plate          E. Allows you to raise and lower presser foot
___ 6. Slide Plate           F. Reverses stitches
___ 7. Bobbin Winder         G. Moves fabric under presser foot
___ 8. Hand Wheel            H. Covers bobbin and bobbin case
___ I. Metal bar to which presser foot is attached

NAME ____________________________  CLASS ____________________________
DATE ______________________________
B. 1. Clutch
   2. Tension Dial
   3. Take-up Lever
   4. Spool Pin
   5. Sewing Light
   6. Needle Clamp
   7. Needle
   8. Stitch Regulator

A. Controls flow of needle thread
B. Illuminates sewing area
C. Pierces fabric
D. Screw-like mechanism inside of hand wheel
E. Holds needle in place
F. Regulates amount of tension on needle thread
G. Holds spool of thread
H. Regulates length of stitch
I. Sharp slanted edge built into presser bar
MATCH THE FOLLOWING SEWING MACHINE PARTS WITH THEIR FUNCTION.

A 1. Presser Bar Lever
   B 2. Presser Bar
   C 3. Presser Foot
   D 4. Feed Dog
   E 5. Throat Plate
   F 6. Slide Plate
   G 7. Bobbin Winder
   H 8. Hand Wheel

A. Holds fabric against feed dog
B. Covers feed dog mechanism
C. Transfers thread from spool to bobbin
D. Controls movement of take-up lever and needle
E. Allows you to raise and lower presser foot
F. Reverses stitches
G. Moves fabric under presser foot
H. Covers bobbin and bobbin case
I. Metal bar to which presser foot is attached
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<tr>
<td>B</td>
<td>1. Clutch</td>
<td>A. Controls flow of needle thread</td>
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<td>E</td>
<td>2. Tension Dial</td>
<td>B. Illuminates sewing area</td>
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<td>A</td>
<td>3. Take-up Lever</td>
<td>C. Pierces fabric</td>
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<td>G</td>
<td>4. Spool Pin</td>
<td>D. Screw-like mechanism inside of hand wheel</td>
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<td>B</td>
<td>5. Sewing Light</td>
<td>E. Holds needle in place</td>
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<td>F</td>
<td>6. Needle Clamp</td>
<td>F. Regulates amount of tension on needle thread</td>
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<td>7. Needle</td>
<td>G. Holds spool of thread</td>
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<td>H</td>
<td>8. Stitch Regulator</td>
<td>H. Regulates length of stitch</td>
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<td>I. Sharp slanted edge built into presser bar</td>
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</table>
GETTING TO KNOW THE SEWING MACHINE

NAME ____________________
CLASS ____________________
DATE ____________________

1. **PRESSER BAR LEVER** - allows you to raise and lower presser foot.
2. **PRESSER BAR** - metal bar to which presser foot is attached.
3. **PRESSER FOOT** - holds fabric against feed dog.
5. **THRUST PLATE** - covers feed dog mechanism. Numbered guidelines on right and left sides of plate help keep seams straight.
7. **BOBBIN WINDER** - mechanism that allows transferring thread from spool to bobbin.
8. **HAND WHEEL** - controls movement of take-up lever and needle. Always turn toward you.
9. **CLUTCH** - screw-like mechanism inside of hand wheel that must be loosened for winding the bobbin and tightened for sewing.
10. **TENSION DIAL** - regulates the amount of tension on the needle thread.
11. **TAKE-UP LEVER** - controls the flow of needle thread.
12. **THREAD CUTTER** - sharp slanted edge built into presser bar for safety and convenience.
13. **SPOOL PIN** - holds spool of thread.
14. **REVERSE-STITCH LEVER** - reverses stitching direction to fasten thread ends.
15. **SEWING LIGHT** - illuminates sewing area.
16. **NEEDLE CLAMP** - holds needle in place.
17. **NEEDLE** - pierces fabric and joins top thread with bobbin thread forming stitches.
18. **STITCH REGULATOR** - regulates length of stitch from six stitches per inch to twenty stitches per inch.
Wind Up To Sew!
ON THE PRECEDING PAGE IS A WORD WINDER PUZZLE ENTITLED "WIND UP TO SEW". TO COMPLETE THE PUZZLE USE THE FOLLOWING CLUES. FILL IN THE PUZZLE WITH YOUR ANSWER WORKING FROM LEFT TO RIGHT OR FROM TOP TO BOTTOM. THE CORRECT ANSWER WILL EXACTLY FILL THE SPACES ALLOWED.

CLUES:
1. Regulates the amount of tension on the needle thread.
2. Illuminates sewing area.
3. Allows you to raise and lower presser foot.
4. Controls movement of take-up lever and needle.
5. Covers feed dog mechanism.
8. Reverses stitching direction to fasten thread ends.
9. Sharp slanted edge built into presser bar.
10. Controls the flow of needle thread.
11. Screw-like mechanism inside of hand wheel.
12. Covers bobbin and bobbin case.
13. Regulates length of stitch.
15. Transfers thread from spool to bobbin.
16. Mechanism that holds fabric against feed dog is the presser_______.
WIND UP TO SEW!
GETTING TO KNOW THE SEWING MACHINE

WORD SEARCH

NAME

CLASS

DATE

REVERERLABRESSEPSUOT
TTKEBAOZSMGEZSDTPV
EAIHBCXYGMEAPTI

DLPPRESSERFOOTPI
CPFOXEOHOTMQDOHCMX
FELAYSKNEEDELRLRHTBU
UDCHRSYQTWRNPORRK
SILWFEEDDGOBIAEEG

GLXIMRSLGMOGHNTGR
ASAMXPSPBCRWAKPUTK
UTNNKADGLERSNTLLLUL

BOBBINWINDERDFAACG
SRIRNACROGQQOWETTDDB

NEEDELECLAMPGHEEOAG

ADFLAIIDNOISNATUREI
SICTAKEUPEVERRS

ERMKVNPQRSTCLUTCHF

GHIJTHGILGNIWESKTL

REVERSESTITCHLEVER

IN THE BLOCK OF LETTERS ABOVE ARE THE NAMES OF 18 SEWING MACHINE PARTS. THESE NAMES MAY BE FOUND VERTICALLY OR HORIZONTALLY AND MAY BE SPELLED FORWARDS OR BACKWARDS. ON THE NEXT PAGE IS A FUNCTION OF EACH MACHINE PART FOUND ABOVE.
1. Allows you to raise and lower the presser foot.
2. Metal bar to which presser foot is attached.
3. Holds fabric against feed dog.
5. Covers feed dog mechanism.
6. Covers bobbin and bobbin case.
7. Mechanism that allows transferring thread from spool to bobbin.
8. Controls movement of take-up lever and needle.
9. Screw-like mechanism inside of hand wheel.
10. Regulates the amount of tension on the needle thread.
11. Controls the flow of needle thread.
12. Sharp slanted edge built into presser bar.
13. Holds spool of thread.
15. Illuminates sewing area.
16. Holds needle in place.
17. Pierces fabric and joins top thread with bobbin thread forming stitches.
18. Regulates length of stitch.
IN THE BLOCK OF LETTERS ABOVE ARE THE NAMES OF 18 SEWING MACHINE PARTS. THESE NAMES MAY BE FOUND VERTICALLY OR HORIZONTALLY AND MAY BE SPelled FORWARDS OR BACKWARDS. ON THE NEXT PAGE IS A FUNCTION OF EACH MACHINE PART FOUND ABOVE.
IDENTIFY THE NAME AND FUNCTION OF EACH MACHINE PART AS LABELED ON THE ACTUAL SEWING MACHINE.

<table>
<thead>
<tr>
<th>NAME</th>
<th>FUNCTION</th>
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</table>
Getting to Know the Sewing Machine

Post-test Key
40 Possible Points

Identify the name and function of each machine part as labeled on the actual sewing machine.

<table>
<thead>
<tr>
<th>Name</th>
<th>Function</th>
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</thead>
<tbody>
<tr>
<td>1. Take-up Lever</td>
<td>1. Controls the flow of needle thread</td>
</tr>
<tr>
<td>2. Clutch</td>
<td>2. Takes machine out of gear for winding bobbin</td>
</tr>
<tr>
<td>3. Throat Plate</td>
<td>3. Covers feed dog mechanism</td>
</tr>
<tr>
<td>4. Presser Bar</td>
<td>4. Metal bar to which presser foot is attached</td>
</tr>
<tr>
<td>5. Stitch Regulator or Reverse-stitch Regulator</td>
<td>5. Regulates length of stitch or direction of stitch</td>
</tr>
<tr>
<td>6. Tension Dial</td>
<td>6. Regulates amount of tension on needle thread</td>
</tr>
<tr>
<td>7. Sewing Light</td>
<td>7. Illuminates sewing area</td>
</tr>
<tr>
<td>8. Spool Pin</td>
<td>8. Holds spool of thread</td>
</tr>
<tr>
<td>9. Hand Wheel</td>
<td>9. Controls movement of take-up lever and needle</td>
</tr>
<tr>
<td>12. Slide Plate</td>
<td>12. Covers bobbin and bobbin case</td>
</tr>
<tr>
<td>13. Bobbin Winder</td>
<td>13. Transfers thread from spool to bobbin</td>
</tr>
<tr>
<td>15. Presser Foot</td>
<td>15. Holds fabric against feed dog</td>
</tr>
<tr>
<td><strong>Name</strong></td>
<td><strong>Function</strong></td>
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III. Lesson 3: Caring for the Sewing Machine

A. Objectives:

1. The student will be better able to care for the sewing machine.

2. The student will be better able to open and put away the machine properly.

3. The student will be better able to apply safety practices in sewing, including handling of electrical cords and protection of self from sewing hazards.

4. The student will be better able to remove and replace the sewing machine needle.

B. Generalizations:

1. Proper use and care of the sewing machine prolongs its life and usefulness.

2. Correct care of the electrical connection cord prolongs use of the sewing machine and prevents accidents.

C. Pre-test

D. Learning Activities:

1. **Teacher Lecture Demonstration**: Proper care of the sewing machine.

2. **Information Sheet**: Instructions for opening and closing the sewing machine, connecting the sewing machine, and replacing the sewing machine needle.

3. **Class Discussion**: Safety in sewing. Discuss types of accidents that have or could happen while sewing.

4. **Safety Booklet**: Students write and/or illustrate booklet on safety in sewing.

E. Post-test

F. Further Activities:

1. Demonstrate how to open and put away the machine properly to another person who sews.

2. Ask a person who sews what types of accidents, if any, he or she has had while sewing.
3. Ask a person who sews to show you the procedure for oiling a sewing machine.

G. Suggested Resources:

1. Fill the correct term in the blank. (5 points)
   A. A _________ is the flat level surface under the sewing machine head.
   B. The upper portion of the sewing machine is called the _________.
   C. The _________ is the large hinged leaf that covers the machine when it is put away and holds the excess material when sewing.
   D. The upright case or table which holds the sewing machine is known as the _________.
   E. The hinged leaf at the front of the cabinet which is lifted when opening and closing the machine is called the _________.

2. List the steps followed to perform the following tasks:
   A. Opening the sewing machine (10 points)

   B. Connecting the sewing machine (5 points)
C. Putting the sewing machine away (10 points)

D. Removing and replacing a needle (10 points)
1. Fill the correct term in the blank. (5 points)
   A. A _____bed_____ is the flat level surface under the sewing machine head.
   B. The upper portion of the sewing machine is called the _____head_____.
   C. The _____lid_____ is the large hinged leaf that covers the machine when it is put away and holds the excess material when sewing.
   D. The upright case or table which holds the sewing machine is known as the _____cabinet_____.
   E. The hinged leaf at the front of the cabinet which is lifted when opening and closing the machine is called the _____front leaf_____.

2. List the steps followed to perform the following tasks:
   A. Opening the sewing machine: (10 points)
      (1) Stand while opening the machine cabinet.
      (2) Raise and lower the lid to form a flat surface with left hand. (Reverse use of hands if left-handed.)
      (3) Raise front leaf that supports the head with left hand.
      (4) Using a firm grip of the right hand, raise the head and tilt to back.
      (5) With the left hand, place the front leaf in place.
      (6) Lower head to rest on the bed of the machine.
   B. Connecting the sewing machine: (5 points)
      (1) Push the machine plug into the machine receptacle.
      (2) Connect the power-line plug to the electrical outlet.
      (3) Switch on sewing light to check connection.
      (4) Reverse order to disconnect machine.
   C. Putting the sewing machine away: (10 points)
      (1) Before putting machine away:
(A) Remove pins, needles, and all work materials from the machine.
(B) Wipe loose threads, scraps, strings, and dust into wastebasket.
(C) Place a small piece of fabric in position beneath the presser foot.
(D) Lower the presser foot.
(E) Turn the hand wheel to lower the needle into the fabric. This will protect the needle and presser foot from any movement and will prevent the tension from getting out of adjustment.

(2) Remove cord from wall socket.
(3) Remove cord from machine and store in right hand drawer.
(4) With right hand, lift the head of the machine. (Reverse hands if left-handed.)
(5) With left hand, raise the front leaf that supports the head.
(6) Carefully lower head into the cabinet.
(7) Place leaf in position.
(8) Lower the lid.

D. Removing and Replacing a Needle: (10 Points)

(1) Turn the hand wheel by hand until the needle is at its highest point.
(2) Loosen the thumb screw of the needle clamp.
(3) Remove the needle.
(4) Inspect needle to determine if it is bent or blunt.
(5) If needle is damaged, select new needle.
(6) Insert needle with long groove side on the same side of the needle bar as the last thread guide.
(7) Push needle up into slot as high as possible.
(8) Tighten the thumb screw.
1. **Bed** - The flat level surface under the sewing machine head.

2. **Cabinet** - The upright case or table which holds the sewing machine.

3. **Front Leaf** - The hinged leaf at the front of the cabinet which is lifted when opening and closing the machine.

4. **Head** - The upper portion of the sewing machine.

5. **Lid** - The large hinged leaf that covers the machine when it is put away and holds excess material when sewing.
LET'S GET TO KNOW YOUR MACHINE!  THE SEWING MACHINE IS THE MOST HELPFUL PIECE OF EQUIPMENT AVAILABLE; YET, IT IS ALSO THE MOST EXPENSIVE AND COMPLICATED PIECE OF EQUIPMENT YOU WILL USE. KNOWLEDGE OF OPENING, DISCONNECTING, STORAGE OF THE MACHINE, AND REPLACING THE NEEDLE PROLONG ITS LIFE AND USEFULNESS. THE FOLLOWING PARAGRAPHS WILL HELP YOU PERFORM EACH TASK SUCCESSFULLY AND SAFELY.

OPENING THE SEWING MACHINE (CABINET MODEL)

1. STAND WHILE OPENING THE MACHINE CABINET.
2. WITH YOUR LEFT HAND, RAISE AND LOWER THE LID TO FORM A FLAT SURFACE. (REVERSE USE OF HANDS IF LEFT-HANDED.)
3. RAISE FRONT LEAF THAT SUPPORTS THE HEAD WITH LEFT HAND.
4. USING A FIRM GRIP OF THE RIGHT HAND, RAISE THE HEAD AND TILT TO BACK.
5. WITH THE LEFT HAND, PLACE THE FRONT LEAF IN PLACE.
6. LOWER HEAD TO REST ON THE BED OF THE MACHINE.

CONNECTING THE SEWING MACHINE

1. PUSH THE MACHINE PLUG INTO THE MACHINE RECEPTACLE.
2. CONNECT THE POWER-LINE PLUG TO THE ELECTRICAL OUTLET.
3. SWITCH ON SEWING LIGHT TO CHECK CONNECTION.
4. REVERSE ORDER TO DISCONNECT MACHINE.

CAUTION: AS WITH ANY ELECTRICAL APPLIANCE, MAKE SURE HANDS ARE DRY BEFORE CONNECTING OR DISCONNECTING. ALWAYS PULL PLUG OUT BY THE HEAD RATHER THAN BY THE COR
Putting the Sewing Machine Away

1. Before putting machine away:
   A. Remove pins, needles, and all work materials from the machine.
   B. Wipe loose threads, scraps, strings, and dust into wastebasket.
   C. Place a small piece of fabric in position beneath the presser foot.
   D. Lower the presser foot.
   E. Turn the hand wheel to lower the needle into the fabric. This will protect the needle and presser foot from any movement and will prevent the tension from getting out of adjustment.

2. Remove cord from wall socket.
3. Remove cord from machine and store in right hand drawer.
4. With right hand, lift the head of the machine. (Reverse hands if left-handed.)
5. With left hand, raise the front leaf that supports the head.
6. Carefully lower head into the cabinet.
7. Place leaf in position.
8. Lower the lid.

Removing and Replacing the Sewing Machine Needle

1. Make sure the sewing machine is disconnected from the electrical outlet.
2. Turn the hand wheel by hand until the needle is at its highest point.
3. Loosen the thumb screw of the needle clamp.
4. Remove the needle.
5. Inspect the needle to determine if it is bent or blunt.
6. IF THE NEEDLE IS DAMAGED, SELECT NEW NEEDLE.
7. INSERT THE NEEDLE WITH LONG GROOVE SIDE ON THE SAME SIDE OF THE NEEDLE BAR AS THE LAST THREAD GUIDE.
8. PUSH NEEDLE INTO SLOT AS HIGH AS POSSIBLE.
9. TIGHTEN THE THUMB SCREW.

AFTER YOU HAVE READ THIS INFORMATION SHEET AND WATCHED THE TEACHER DEMONSTRATION, PRACTICE THESE PROCEDURES ON AN ACTUAL SEWING MACHINE.
Caring for the Sewing Machine

Post-test

40 Possible Points

1. Define the following: (5 points)
   A. Head -
   B. Front leaf -
   C. Lid -
   D. Cabinet -
   E. Bed -

2. Demonstrate the ability to:
   A. Open the machine (10 points)
   B. Connect the machine (5 points)
   C. Change the sewing needle (10 points)
   D. Close the machine (10 points)
Caring for the Sewing Machine

Post-test Key

40 Possible Points

1. Define the following: (5 points)
   A. Head - the upper portion of the sewing machine.
   B. Front leaf - the hinged leaf at the front of the cabinet which is lifted when opening and closing the machine.
   C. Lid - the large hinged leaf that covers the machine when it is put away.
   D. Cabinet - the upright case or table which holds the sewing machine.
   E. Bed - the flat level surface under the sewing machine head.

2. Demonstrate the ability to:
   A. Open the machine (10 points)
   B. Connect the machine (5 points)
   C. Change the sewing needle (10 points)
   D. Close the machine (10 points)

(Performance skills will be evaluated by the teacher.)
IV. Lesson 4: Operating the Sewing Machine

A. Objective:

1. The student will be better able to demonstrate the ability to sit properly at the sewing machine, start, control the speed, and stop the machine, stitch straight and curved lines on paper pattern, and turn square corners on paper pattern.

B. Generalizations:

1. Comfort and efficiency are related to posture while sewing.
2. Accuracy in sewing is dependent upon procedures used in the operation of the sewing machine.

C. Pre-test

D. Learning Activities:

1. Teacher Demonstration: Proper posture when doing hand and machine sewing.
2. Information Sheet: Proper posture and operating the sewing machine
3. Information Sheet: (Visually impaired student) "Operating the Sewing Machine"
4. Information Sheet: Stitching straight lines, curves, and corners
5. Lab Practice: Students practice controlling speed and stitching straight lines, curves and corners.
6. Discussion: What is the best position for fabric when sewing?

E. Post-test

F. Further Activities:

1. Make your own paper patterns and practice sewing straight lines, curved lines, and square corners.

* Notes to the Teacher:

1. When learning to control speed, have the totally blind student listen for the speed of the machine.
2. The pre- and post-test for this lesson measure only the comprehension level. The application level for this lesson will be measured by a psychomotor checklist during the clothing lab.

3. Have another student cut the paper pattern for the visually impaired student. (Pages 53-55)
OPERATING THE SEWING MACHINE
PRE-TEST
40 POSSIBLE POINTS

INDICATE T FOR THE TRUE STATEMENTS AND F FOR THE FALSE STATEMENTS.

1. It is recommended that you have good posture while sewing.
2. It is more comfortable if your shoulders slump when sewing.
3. Sewing is easier if you sit to the left of the needle.
4. Feet should be placed flat on the floor beneath the machine.
5. The speed of the machine is controlled by a knee lever or a presser bar lever.
6. Fast speed is easiest to control when sewing.
7. Jerky speed will cause uneven and irregular stitching.
8. To slow down or stop machine, put your hand on the spool pin.
9. The needle must be at the highest point when you remove material from the sewing machine.
10. Hands should be placed gently on the fabric so you are guiding it without pulling or pushing it.
OPERATING THE SEWING MACHINE

PRE-TEST KEY

40 POSSIBLE POINTS

INDICATE T FOR THE TRUE STATEMENTS AND F FOR THE FALSE STATEMENTS:

1. IT IS RECOMMENDED THAT YOU HAVE GOOD POSTURE WHILE SEWING.  T

2. IT IS MORE COMFORTABLE IF YOUR SHOULDERS SLUMP WHEN SEWING.  F

3. SEWING IS EASIER IF YOU SIT TO THE LEFT OF THE NEEDLE.  F

4. FEET SHOULD BE PLACED FLAT ON THE FLOOR BENEATH THE MACHINE.  T

5. THE SPEED OF THE MACHINE IS CONTROLLED BY A KNEE LEVER OR A PRESSER BAR LEVER.  F

6. FAST SPEED IS EASIEST TO CONTROL WHEN SEWING.  F

7. JERKY SPEED WILL CAUSE UNEVEN AND IRREGULAR STITCHING.  T

8. TO SLOW DOWN OR STOP MACHINE, PUT YOUR HAND ON THE SPOOL PIN.  F

9. THE NEEDLE MUST BE AT THE HIGHEST POINT WHEN YOU REMOVE MATERIAL FROM THE SEWING MACHINE.  T

10. HANDS SHOULD BE PLACED GENTLY ON THE FABRIC SO YOU ARE GUIDING IT WITHOUT PULLING OR PUSHING IT.  T
Sit up straight - we are ready to start sewing! When you sew for long periods of time, you will be more efficient and more comfortable if you sit straight, not stiff, and well back into your chair. Keep your shoulders back. It is important that your sewing chair is the correct height for you. Sit directly in front of the machine so you can see what you are doing and so you have good control of the fabric as it feeds into the machine. Place both of your feet flat on the floor beneath the machine. Rest your hands gently on the fabric so you are guiding it without pulling or pushing it.

You must learn to control the speed at which you operate the machine. The speed can be controlled either by a knee control or foot pedal. Check to see if you can find these controls. Press on the control lever. Try to keep the application of pressure steady so the machine does not go too slowly or too fast. An unsteady speed, jerky speed, or speed that is too fast or too slow, will result in irregular and uneven stitches. Too much speed is not only hard to control but also damaging to the machine. Practice pushing steadily on the foot pedal or knee lever until you can run the machine with smooth control.

To begin sewing, lower the needle and the presser foot. Start the machine by applying pressure to the knee or foot control. Many beginners have the problem of going too fast or too slow. Practice until you achieve the control and speed that works the best for you.
When you wish to stop the machine, place your right hand on the hand wheel to assist in an even slowing down as you release pressure on the foot or knee control.

Be sure the needle is at its highest point before you remove the material. If you do this, the threads will not jam in the bobbin case.
OPERATING THE SEWING MACHINE

You're ready to sew! Your teacher may recommend that you remove the needle from the sewing machine until you have learned to operate and control the speed of the sewing machine. Once both you and your teacher feel you have mastered these skills, you may replace the needle and thread the machine.

An important measurement to remember is 5/8". This is the standard seam allowance used on patterns. To help you determine where the 5/8" marking is on the throat plate, you may use one of these two methods. One method is to put a piece of adhesive tape 5/8" away from the lowered needle. You may find one layer of tape satisfactory or you may decide to build the guide up by putting layer upon layer of adhesive tape until the edge is easy for you to feel. If the top layer of adhesive tape becomes sticky, simply dust it with a little corn starch or powder. The other method is to use the metal seam guide attachment which comes with most machines. Try both methods and decide which method works best for you.

To begin sewing, follow these steps:

Step 1: Place both hands flat on the sewing machine bed.

Step 2: Slowly bring your right index finger up to the needle clamp. If the needle clamp is high, the needle is up; if the needle clamp is low, the needle is down. The needle must be in the highest position before you put the fabric under the presser foot.
STEP 3: Slide the fabric under the presser foot until it touches the index finger of your right hand which you have placed at the back of the presser foot.

STEP 4: Check that the right edge of the fabric is at the 5/8" marking.

STEP 5: Lower the needle into the fabric and gently move the presser bar lever down so the presser foot is resting on the fabric.

STEP 6: To secure the thread ends and prevent the seam from ripping, backstitch three or four stitches.

STEP 7: Return the reverse stitch lever to its original position and begin sewing the seam.

STEP 8: Keep your right index finger on the long prong of the presser foot and your middle finger on the outside edge of the fabric. This will help keep the seam width fairly constant. However, your middle finger will have a tendency to follow the edge of the cloth no matter what width the seam is so check the seam guide periodically.

STEP 9: Rest your left hand lightly on the fabric to the left front on the needle. This will aid the flow of the fabric moved by the feed dog. The thumb of your left hand can help keep the right edge of the fabric even with the seam guide.

STEP 10: Continue stitching until you come to the end of the seam.

STEP 11: Reverse the direction of the stitching for three or four stitches.

STEP 12: Turn the hand wheel until the needle is again at its highest position.

STEP 13: Raise the presser foot and move the fabric to the back of the presser foot.

STEP 14: Clip the threads at both the beginning and the end of the seam.
INFORMATION COMPILLED FROM THE FOLLOWING SOURCE:
JONES, SALLY. SEWING TECHNIQUES FOR THE BLIND GIRL.
LOUISVILLE, KENTUCKY, AMERICAN PRINTING HOUSE FOR THE BLIND
Since each seam you sew affects the appearance of your sewing project, you will want to practice stitching straight lines, curved lines, and square corners.

**Stitching a Straight Line**

Before you thread your machine, practice stitching on the sheet of paper your teacher hands out. The first step is to lower the needle into one of the straight lines on the paper by turning the hand wheel. The edge of the paper should be lined up on the 5/8" marking on the throat plate. The next step is to lower the presser foot. Start the machine by pressing gently on the knee or foot control. Guiding the paper with your hands, stitch on the line. Let the paper feed through the machine without pushing or pulling.

**Stitching Corners and Curves**

You may find it takes a little more practice to stitch curves and corners than to stitch a straight line. The following steps will help you turn corners. First, lower the needle into the paper at the right hand corner of the square. The edge again should line up with the 5/8" seam guide. Next, lower the presser foot and begin stitching. Stitch to the next corner or to within 5/8" of the edge. Leave the needle in the corner and raise the presser foot. Turn the paper, which is known as pivoting, and lower the presser.
foot. Continue to stitch and pivot until the square is complete.

To stitch a curve, turn the hand wheel to lower the needle into the paper 5/8" from the edge of the paper pattern. Lower the presser foot and begin stitching as slowly as you need to. Follow the lines or the 5/8" seam guide on the throat plate to stitch a smooth curve. Sometimes it may be necessary, especially on small or sharp curves, to stop the machine with the needle in the paper, lift the presser foot slightly, and turn the paper enough to follow the lines.
PAPER PATTERN FOR SEWING STRAIGHT LINES

(CUT ALONG SOLID LINES BEFORE SEWING.)
PAPER PATTERN FOR SEWING-SQUARE CORNERS
PAPER PATTERN FOR SEWING CURVED LINES
(CUT ALONG CURVED LINE BEFORE SEWING.)
1. On the attached paper patterns demonstrate your ability to sew straight lines, curved lines, and square corners. (30 points)

2. Describe proper posture when sewing. (10 points)
1. **On the attached paper patterns demonstrate your ability to sew straight lines, curved lines, and square corners. (30 points)**

2. **Describe proper posture when sewing. (10 points)**

   A. Sit up straight.
   B. Keep your shoulders back.
   C. Place both feet flat on the floor beneath the machine.
   D. Rest hands gently on the fabric.
   E. Sit directly in front of the machine.
V. Lesson 5: Preparing the Machine for Sewing

A. Objective:

1. The student will be better able to demonstrate the ability to wind a bobbin, thread the machine correctly, set the stitch length, select the proper stitch tension, and check the machine for readiness for sewing.

B. Generalizations:

1. Recognition of possible causes of machine difficulty aids the sewer in their prevention and correction.

2. The type of fabric affects the selection of the proper length of stitch and tension setting.

C. Pre-test

D. Learning Activities:

1. **Teacher Demonstration**: Winding the bobbin and threading the machine.

2. **Tape**: Students individually listen to prerecorded tape and perform the task of winding the bobbin and threading a machine.

3. **Teacher Demonstration**: Setting the stitch length, testing the stitch tension, and checking the machine for readiness to sew.

4. **Information Sheet**: Setting the stitch length and testing the stitch tension.

5. **Lab Practice**: Setting the stitch length and testing the stitch tension.

6. **"Sewing Machine License"**: Students achieve sewing license as they meet the specified requirements.

E. Post-test

F. Further Activities:

1. Check a different brand or make of sewing machine to find out if the procedure for winding the bobbin and threading the machine is the same or different. Report your findings to the class.
G. Suggested Resources:


* Notes to the Teacher:

1. The tape script has been written for use with a Singer model #717. If the machines in your department are different, simply change the model number in the script.

2. You will need to make some adaptation to the sewing machine stitch regulator for the visually impaired student. One idea is to glue cord extending out from the number markings. The visually impaired student will then need to learn the number sequence and count the cords to set the stitch regulator.

3. You may find that you will have to adjust the tension for the visually impaired student.

4. You may find that a needle threader will help the visually impaired student thread the sewing machine needle. Some sewing machines have a built-in needle threader but a regular one also works.

5. An aid for the visually impaired student would be for you to mark the top side of the bobbin with several coats of nail polish.
PREPARING THE MACHINE FOR SEWING  
NAME ________________________
PRE-TEST  
CLASS ________________________
40 POSSIBLE POINTS  
DATE ________________________

1. NUMBER THE FOLLOWING TERMS IN THE CORRECT ORDER FOR THREADING THE SEWING MACHINE. (9 POINTS)

- THREAD GUIDE #4
- NEEDLE
- THREAD GUIDE #3
- THREAD GUIDE #1
- SPOOL PIN
- THREAD GUIDE #5
- TAKE-UP LEVER
- TENSION DIAL
- THREAD GUIDE #2

2. DESCRIBE HOW TO DO THE FOLLOWING:

A. WIND THE BOBBIN (11 POINTS)

B. SET THE STITCH LENGTH (10 POINTS)

C. TESTING THE STITCH TENSION (10 POINTS)
PREPARING THE MACHINE FOR SEWING

1. **Number the following terms in the correct order for threading the sewing machine.** (9 points)

   1. SPOOL PIN
   2. THREAD GUIDE #1
   3. TENSION DIAL
   4. THREAD GUIDE #2
   5. TAKE-UP LEVER
   6. THREAD GUIDE #3
   7. THREAD GUIDE #4
   9. NEEDLE
   8. THREAD GUIDE #5

2. **Describe how to do the following:**

   A. **Wind the bobbin** (11 points)
   
   1. Loosen the clutch.
   2. Place bobbin on bobbin winder.
   3. Press bobbin winder against the hand wheel.
   4. Place thread on spool pin.
   5. Wrap thread around bobbin.
   6. Start machine and continue winding until bobbin is full.

   B. **Set the stitch length** (10 points)
   
   1. Loosen the stitch regulator thumb screw.
   2. Move stitch regulator to desired number of stitches per inch.
   3. Tighten the stitch regulator thumb screw.
C. Testing the Stitch Tension (10 points)

(1) Sew a line approximately three inches long on a double sample of fabric.

(2) If tension is not balanced, check threading.

(3) If threading is correct and loops are forming on the top of the fabric, decrease the top tension by turning the tension dial to the left or to a smaller number.

(4) If loops are forming on the bottom of the fabric, increase the top tension by turning the tension dial to the right or to a larger number.
PREPARING THE MACHINE FOR SEWING

TAPE SCRIPT

NAME

CLASS

DATE

BEFORE YOU CONTINUE WITH THIS TAPE, PLEASE GET THE FOLLOWING MATERIALS READY:

1. Singer sewing machine model #717 (set up and connect to an electrical outlet).
2. An empty bobbin.
4. Scissors.

***

This tape will teach you how to thread your sewing machine properly. It includes step by step directions for:
(1) Winding the bobbin, (2) threading the bobbin case, and (3) threading the machine.

***

Have you heard the old cliché "practice makes perfect"? This tape will give you the chance to practice as many times as you like and at your own speed. You will not even need to have your teacher present while you are learning.

As you listen to this tape, simply stop the recorder after each step to give you time to complete the task successfully at your own pace.

When you have mastered the task and are ready to continue, just push the play button and listen for the directions for the next step. As soon as you have mastered one step move on to the next.

*** Denotes a pause
If you wish, push the rewind button to go back over the previous step for more practice.

Let's begin by identifying the parts of the machine. As I say each part, identify it by touching it with your hand.

Hand wheel ***
Large screw ***
Tension dial ***
Thread guides - you should be able to find 5 ***
Bobbin winder ***
Take-up lever ***
Spool pin and bobbin spool pin ***
Slide plate ***
Needle ***
Presser foot ***
Presser bar lever ***

Threading the machine is important. The machine will work properly only if the threading is exact.

Now you are ready to practice threading the machine. Many brands and styles of machines are available on the market today. Each model is threaded in a particular way. However the same general procedure is used for threading most machines. If your machine is not a Singer model #491, be sure to check the instruction book that came with your machine for details.

Let's wind the bobbin. You will remember that the lower thread on the sewing machine is wound on a bobbin. Most bobbins are filled on a special spindle called a bobbin winder. The bobbin winder is located near the hand wheel. Here are the steps to follow for winding the bobbin:

Step 1: Place the spool of thread on the spool pin. ***
Take the thread through the bobbin winder thread guide. To secure the thread end, wrap around the bobbin a few times. Make sure that the thread winds onto the bobbin with the thread toward you.
STEP 2: Place the bobbin on the bobbin winder *** and snap it into place.*** Did you hear it click into position? Good!

STEP 3: Now press the bobbin winder against the hand wheel.***

STEP 4: Loosen the clutch by unscrewing the large screw in the hand wheel.***

Are you ready to continue?***

STEP 5: Start the machine. Keep your machine at a steady, moderate pace so the thread will wind more evenly onto the bobbin.

STEP 6: Continue winding the bobbin until you have the desired amount of thread on or until the bobbin is full and snaps out of the winding position automatically.***

STEP 7: Now cut the thread between the spool of thread and the bobbin.*** Tighten the large screw in the hand wheel.***

STEP 8: Remove the bobbin from the bobbin winder.*** You are ready to thread it in the bobbin case.***

**Threading the Bobbin Case**

The Singer model #717 has a bobbin case built into the machine. It is important that the thread unwinds in the proper direction. If the bobbin is placed incorrectly in the case, the tension for the bottom thread will not be balanced and your stitches will be too loose. Directions for threading the bobbin case are as follows:

STEP 1: Hold the bobbin in your left hand with the thread unwinding in a clockwise direction.***

STEP 2: Drop the bobbin into the case.***

STEP 3: Pull the thread toward you until it comes to a little groove or notch which is located at the seven o'clock position.***
**Step 4:** Draw the thread into the notch and lay the thread across the bobbin toward the right.***

**Step 5:** Now close the slide plate. Make sure you have not caught the thread in the slide plate.***

It's time to thread the upper part of the machine.

**Step 1:** Raise the presser foot to the "up" position with the presser bar lever.***

**Step 2:** With the hand wheel, raise the take-up lever to its highest point. This step brings the needle up and will also prevent it from unthreading when you begin to sew.***

**Step 3:** Place the spool of thread on the spool pin.***

**Step 4:** Put the thread through the thread guide nearest the spool. Some thread guides have slots for the thread to pierce through while others have to be threaded into a small hole. Take your time and master this step.***

**Step 5:** Bring the thread down and around the tension dial from right to left. Make sure you have taken the thread around and up through all the thread guides and the tension spring. You will have to listen for the click which will tell you the thread is in position.***

**Step 6:** Find the next thread guide and secure the thread in it.***

**Step 7:** Feed the thread through the eye of the take-up lever. Here again you may have to thread through a small hole or there may be a slot to pull the thread through.***

**Step 8:** Pull the thread down toward the needle making sure to thread each thread guide.*** There should be three or four thread guides before coming to the needle.

**Step 9:** Thread the needle. Be sure you are threading from the long groove side of the needle. You can tell you are on the right side by noting that the last thread guide is on the same side as the long groove.***

**Step 10:** Pull the thread through the needle and out three to five inches. The machine is now threaded but not quite ready to begin sewing.***
The bobbin thread must be brought to the top of the machine before you begin to sew. The needle (top) thread loops with the bobbin (bottom) thread each time the needle goes up and down. This is how the stitches are formed. To bring the lower thread up follow these steps:

**Step 1:** Hold the needle thread firmly in your left hand.***

**Step 2:** With your right hand, turn the hand wheel one complete turn toward you. The needle will go down and come up to its highest point again.***

**Step 3:** Gently pull the needle thread. The loop from the bobbin thread will follow and be brought up to the top part of the machine.***

**Step 4:** Now pull both threads - the upper and lower - toward the back of the machine. The upper thread should go between the prongs of the presser foot,***

**Step 5:** Close the slide plate,***

Check to be sure the take-up lever is at its highest point and the clutch has been tightened (engaged).***

You are ready to begin sewing. Have fun!
YOU NEED TO LEARN TO ADJUST THE STITCH AND TENSION SETTINGS. THE PROPER LENGTH OF STITCH AND TENSION SETTING WILL BE DETERMINED BY THE KIND OF FABRIC YOU CHOOSE WHEN SEWING. THE MOST COMMON STITCH SETTING FOR REGULAR SEWING ON MEDIUM-WEIGHT FABRICS IS 10 TO 12 STITCHES PER INCH. VERY SMALL STITCHES, 18 TO 22 STITCHES PER INCH, ARE RECOMMENDED FOR FABRICS AND STRUCTURAL POINTS WHICH REQUIRE ADDED STRENGTH OR REINFORCEMENT. REMEMBER THAT THESE STITCH LENGTHS ARE ONLY SUGGESTIONS, NOT ABSOLUTES. BE SURE TO CHECK THE EFFECT OF RECOMMENDED STITCH LENGTHS ON A SAMPLER PIECE OF YOUR FABRIC BEFORE BEGINNING TO SEW.

THE PARTICULAR CONSTRUCTION TASK WILL ALSO HAVE AN EFFECT ON THE SIZE OF STITCH YOU USE. IF THE PATTERN GUIDE INDICATES MACHINE BASTING OR GATHERING, YOU WILL USE THE LARGEST STITCH SETTING WHICH IS ABOUT SIX STITCHES PER INCH.

TO RESET YOUR STITCH LENGTH, LOOSEN THE STITCH REGULATOR SCREW, MOVE THE REGULATOR DOWN TO NUMBER SIX AND TIGHTEN THE SCREW.

A PROPERLY BALANCED TENSION WILL HAVE NO NOTICEABLE LOOPS OF THREAD ON EITHER THE TOP OR BOTTOM OF A STITCHING LINE. IF YOU DO NOTICE LOOPS, ONE TENSION IS MORE LOOSE THAN THE OTHER. IT IS BEST TO CHECK YOUR TENSION ON A DOUBLE THICKNESS OF FABRIC SINCE MOST OF YOUR SEWING WILL BE DONE ON TWO THICKNESSES. TENSION ADJUSTMENTS ARE GENERALLY DONE FROM THE TOP WITH THE TENSION DIAL. IF LOOPS APPEAR ON THE
TOP OF THE FABRIC, THE TOP TENSION IS TOO TIGHT. DECREASE THE TOP TENSION BY TURNING THE DIAL TO A SMALLER NUMBER. IF THE LOOPS APPEAR ON THE BOTTOM OF THE FABRIC, THE TOP TENSION MAY BE TOO LOOSE. THIS CAN BE CORRECTED BY INCREASING THE TOP TENSION. TO DO THIS, THE TENSION DIAL IS TURNED TO A LARGER NUMBER. BEFORE DOING ANY OTHER ADJUSTING, CHECK YOUR MACHINE INSTRUCTION BOOK FOR MORE SPECIFIC INFORMATION. AN IMPROPERLY ADJUSTED TENSION WILL CAUSE SEAMS TO PUCKER OR STITCHES TO RIP APART EASILY.

AFTER VIEWING THE TEACHER DEMONSTRATION AND READING THIS INFORMATION SHEET DO THE FOLLOWING:

1. OBTAIN THE FOLLOWING FROM YOUR SEWING KIT OR TEACHER: SPOOL OF THREAD, BOBBIN, SCISSORS, AND A SCRAP PIECE OF FABRIC.

2. SET UP AND CONNECT THE SEWING MACHINE TO AN ELECTRICAL OUTLET.

3. WIND THE BOBBIN AND THREAD THE MACHINE.

4. SET THE STITCH REGULATOR FOR TEN STITCHES PER INCH.

5. TEST THE STITCH TENSION. IF TENSION IS INCORRECT, ADJUST IT.

6. HAVE YOUR TEACHER CHECK YOUR STITCHING WHEN YOU THINK THE TENSION IS CORRECT.
SEWING MACHINE LICENSE

THE FOLLOWING PERSON HAS MET THE REQUIREMENTS NECESSARY TO BE LICENSED AS A SEWING MACHINE OPERATOR.

NAME ____________________________
GRADE ____________________________
SCHOOL ____________________________
DATE ____________________________

SIGNATURE OF STUDENT ____________________________

SIGNATURE OF H.E. TEACHER ____________________________

NON-TRANSFERABLE

REQUIREMENTS MET:

1. NAME MACHINE PARTS
2. OPEN & CLOSE MACHINE PROPERLY
3. THREAD MACHINE CORRECTLY
4. CHECK STITCH TENSION
5. CHECK STITCH LENGTH
6. CONTROL SPEED OF MACHINE

SKILLS MUST BE MASTERED TO THE SATISFACTION OF H.E. TEACHER.
1. Demonstrate to the teacher your ability to do the following:
   
   A. Wind the bobbin and place in bobbin case.  
      (11 points)
   
   B. Set the stitch regulator at 8 stitches per inch.  
      (10 points)
   
   C. Set the stitch tension for the fabric attached to this test.  
      (10 points)
   
2. On page two of this test is a maze. Draw a path with arrows through this maze so that you will show the correct order for threading the sewing machine. No two lines should cross or travel the same route.  
   (9 points)
PREPARING THE MACHINE FOR SEWING

Post-test key
40 possible points

1. Demonstrate to the teacher your ability to do the following: (Performed to the satisfaction of the teacher)

A. Wind the bobbin and place in bobbin case. (11 points)

B. Set the stitch regulator at 8 stitches per inch. (10 points)

C. Set the stitch tension for the fabric attached to this test. (10 points)

2. On page two of this test is a maze. Draw a path with arrows through this maze so that you will show the correct order for threading the sewing machine. No two lines should cross or travel the same route. (9 points)
VI. Lesson 6: Fabric Selection and Terminology

A. Objectives:

1. The student will be better able to select woven fabric in relation to the chosen pattern.

2. The student will be better able to explain and apply knowledge of fabric terms as applied to woven fabrics.

B. Generalizations:

1. The finished article will give more satisfactory performance when the characteristics of the fabric are compatible with the intended use.

2. Knowledge of fabric terminology aids communication and contributes to satisfactory decision making.

C. Pre-test

D. Learning Activities:

1. Discussion: What factors influence the choice of fabrics for a specific purpose? Do students have something they do not wear or use because fabric is unsuitable to pattern?

2. Information Sheet: Fabric terminology

3. Teacher Lecture Demonstration: Location of various fabric terminology on various types of fabrics.

4. Field Trip: To fabric store to observe and handle various fabrics.

5. Teacher Lecture Demonstration: Making cloth grain perfect.

6. Information Sheet: Making cloth grain perfect

E. Post-test

F. Further Activities:

1. After class discussion on figuring yardage requirements for a particular pattern, purchase the fabric for your back pack. Make your fabric grain-perfect and pre-shrink if necessary.

* Notes to the Teacher:

1. Use burlap or another coarse fabric to demonstrate placement of fabric terms to the visually impaired student.
2. Suggest that the visually impaired student bring someone along when shopping for fabric, notions, and pattern.
Choose the correct response: (32 points)

1. A lengthwise fold is: (A) when the fabric is folded on the lengthwise grain, (B) when the fabric is folded on the crosswise grain, (C) when the fabric is folded on the bias.

2. Fabrics such as corduroy, velvet, and satin require a special cutting layout. These fabrics are known as: (A) without nap fabric, (B) off-grain fabric, (C) nap fabric.

3. The lengthwise or crosswise threads of a fabric are known as: (A) selvage, (B) bias, (C) grain.

4. The crosswise grain threads: (A) run across the fabric from selvage to selvage, (B) are perpendicular to the selvage, (C) both of these.

5. The direction in which the grain runs is known as: (A) with the grain, (B) against the grain, (C) none of the above.

6. When the fabric is folded on the crosswise grain, it is known as a: (A) lengthwise fold, (B) crosswise fold, (C) crosswise threads.

7. When the fabric will not shrink more than 2%, the manufacturer has: (A) sanforized it, (B) made it colorfast, (C) preshrunk it.

8. Colorfast fabrics: (A) will not fade, (B) will not fade if properly washed and cared for, (C) will not fade if bleached.

9. Sanforized fabrics will not shrink more than: (A) 2%, (B) 1%, (C) 3%.

10. The narrow, firmly woven edge on the edge of woven fabric which will not ravel is known as the: (A) selvage, (B) grain, (C) bias.

11. Any direction away from the straight lengthwise or crosswise grain is the: (A) selvage, (B) lengthwise fold, (C) bias.

12. A fabric is: (A) off-grain, (B) on-grain, (C) against grain when the lengthwise and crosswise threads cross each other at a perfect right angle.
13. A fabric is: (A) off-grain, (B) on-grain, (C) against grain when the lengthwise and crosswise threads do not cross each other at a perfect right angle.

14. The threads that run up and down the length of the fabric and are parallel to the selvage are known as: (A) the lengthwise grain, (B) the crosswise grain, (C) the bias.

15. The direction opposite to that in which the fabric grain runs is: (A) with the grain, (B) against the grain, (C) off-grain.

16. Pre-shrunk material will not shrink more than: (A) 3%, (B) 1%, (C) 2%.

List four factors to consider when buying fabric for a specific pattern. (8 points)
FABRIC SELECTION AND TERMINOLOGY

PRE-TEST KEY

40 POSSIBLE POINTS

CHOOSE THE CORRECT RESPONSE: (32 POINTS)

A 1. A LENGTHWISE FOLD IS: (A) WHEN THE FABRIC IS FOLDED ON THE LENGTHWISE GRAIN, (B) WHEN THE FABRIC IS FOLDED ON THE CROSSWISE GRAIN, (C) WHEN THE FABRIC IS FOLDED ON THE BIAS.

C 2. FABRICS SUCH AS CORDUROY, VELVET, AND SATIN REQUIRE A SPECIAL CUTTING LAYOUT. THESE FABRICS ARE KNOWN AS: (A) WITHOUT NAP FABRIC, (B) OFF-GRAIN FABRIC, (C) NAP FABRIC.

C 3. THE LENGTHWISE OR CROSSWISE THREADS OF A FABRIC ARE KNOWN AS: (A) SELVAGE, (B) BIAS, (C) GRAIN.

C 4. THE CROSSWISE GRAIN THREADS: (A) RUN ACROSS THE FABRIC FROM SELVAGE TO SELVAGE, (B) ARE PERPENDICULAR TO THE SELVAGE, (C) BOTH OF THESE.

A 5. THE DIRECTION IN WHICH THE GRAIN RUNS IS KNOWN AS: (A) WITH THE GRAIN, (B) AGAINST THE GRAIN, (C) NONE OF THE ABOVE.

B 6. WHEN THE FABRIC IS FOLDED ON THE CROSSWISE GRAIN, IT IS KNOWN AS A: (A) LENGTHWISE FOLD, (B) CROSSWISE FOLD, (C) CROSSWISE THREADS.

C 7. WHEN THE FABRIC WILL NOT SHRINK MORE THAN 2%, THE MANUFACTURER HAS: (A) SANFORIZED IT, (B) MADE IT COLORFAST, (C) PRESHRUNK IT.

B 8. COLORFAST FABRICS: (A) WILL NOT FADE, (B) WILL NOT FADE IF PROPERLY WASHED AND CARED FOR, (C) WILL NOT FADE IF BLEACHED.

B 9. SANFORIZED FABRICS WILL NOT SHRINK MORE THAN: (A) 2%, (B) 1%, (C) 3%.

A 10. THE NARROW, FIRMLY WOVEN EDGE ON THE EDGE OF WOVEN FABRIC WHICH WILL NOT RAVEL IS KNOWN AS THE: (A) SELVAGE, (B) GRAIN, (C) BIAS.

C 11. ANY DIRECTION AWAY FROM THE STRAIGHT LENGTHWISE OR CROSSWISE GRAIN IS THE: (A) SELVAGE, (B) LENGTHWISE FOLD, (C) BIAS.

B 12. A FABRIC IS: (A) OFF-GRAIN, (B) ON-GRAIN, (C) AGAINST GRAIN WHEN THE LENGTHWISE AND CROSSWISE THREADS CROSS EACH OTHER AT A PERFECT RIGHT ANGLE.
A. 13. A FABRIC IS: (A) OFF- GRAIN, (B) ON- GRAIN, (C) AGAINST GRAIN WHEN THE LENGTHWISE AND CROSSWISE THREADS DO NOT CROSS EACH OTHER AT A PERFECT RIGHT ANGLE.

A. 14. THE THREADS THAT RUN UP AND DOWN THE LENGTH OF THE FABRIC AND ARE PARALLEL TO THE SELVAGE ARE KNOWN AS: (A) THE LENGTHWISE GRAIN, (B) THE CROSSWISE GRAIN, (C) THE BIAS.

B. 15. THE DIRECTION OPPOSITE TO THAT IN WHICH THE FABRIC GRAIN RUNS IS: (A) WITH THE GRAIN, (B) AGAINST THE GRAIN, (C) OFF- GRAIN.

C. 16. PRE- SHRUNK MATERIAL WILL NOT SHRINK MORE THAN: (A) 5%, (B) 1%, (C) 2%.

LIST FOUR FACTORS TO CONSIDER WHEN BUYING FABRIC FOR A SPECIFIC PATTERN. (8 POINTS)
1. HOW FABRIC WOULD LOOK ONCE IT WAS MADE INTO THE PATTERN.
2. SEWING EXPERIENCE OF THE SEWER.
3. THE CARE REQUIRED OF THE FABRIC.
4. HOW GRAIN- PERFECT THE FABRIC IS.
1. **Grain** - The lengthwise or crosswise threads of a fabric.
2. **Lengthwise Grain** - The threads that run up and down the length of the fabric. These threads are parallel to the selvage.
3. **Crosswise Grain** - The threads that run across the fabric between the selvages. These threads are perpendicular to the selvage.
4. **Selvage** - The narrow, firm woven edge on both lengthwise edges of a woven fabric. These edges will not ravel.
5. **On Grain** - A fabric is "on grain" when the lengthwise and crosswise threads cross each other at perfect right angles.
6. **Off Grain** - A fabric is "off grain" when the lengthwise and crosswise threads cross each other on a slant rather than being perpendicular.
7. **With the Grain** - The direction in which the fabric grain runs.
8. **Against the Grain** - The direction opposite to that in which the fabric grain runs.
9. **Bias** - Any direction away from the straight lengthwise or crosswise grain.
10. **With Nap** - Fabrics such as corduroy, velvet, satin, twill, and fabrics with one-way designs. These fabrics require a special cutting layout with all pattern pieces laid so their tops point in the same direction.
11. **Lengthwise Fold** - The fabric is folded on the lengthwise grain.
12. **Crosswise Fold** - The fabric is folded on the crosswise grain.
13. **Pre-shrunk** - Fabric will not shrink more than 2%.
14. **Sanforized** - Fabric will not shrink more than 1% or enough to change size or shape of article.
15. **Colorfast** - Colors will not fade if properly washed and cared for.
The key to successful clothing construction is grain. A grain-perfect article will keep its shape, hang and wear well. Fabrics are woven grain-perfect which means the lengthwise and crosswise threads are at right angles to one another. So, how do fabrics become off-grain? They may become off-grain when they are pressed, when a finish is added or when they are wound on the bolt.

What are some ways you can make your fabric thread-perfect again? The first step is to press the fabric on the wrong side to remove the folds and wrinkles. With some fabrics such as wash and wear materials, synthetics, and double knits, you may find it difficult to remove all of the creases. The next step is to make the fabric grain-perfect at both ends. There are a number of ways to do this. You must choose the method best suited to your fabric since not all methods are workable for all fabrics. None of these will work for a knitted fabric. The following are four easy methods to use with woven fabrics:

**Method 1:** Clip through one selvage with a scissor. Grasp the fabric firmly on either side of the clip and tear quickly across to the other selvage. Cut through the selvage. This method works because fabrics tear on a straight thread. This is a good method for most cottons and cotton blends. Because some fabrics do not tear successfully, be sure to check with your teacher first.

**Method 2:** Clip through the selvage and pull a crosswise thread. With your thumb and forefinger pull a thread loose and gently pull it across the fabric. By removing this thread you will...
HAVE A STRAIGHT GUIDELINE ON WHICH TO CUT. THIS METHOD WORKS WELL ON FABRICS THAT DO NOT TEAR OR FABRICS THAT ARE QUITE LOOSELY WOVEN.

METHOD 3: IF THE FABRIC HAS A DEFINITE WEAVE OR A WOVEN CHECK OR STRIPE YOU CAN CUT ACROSS THE FABRIC FOLLOWING THE PATTERN. WOVEN DESIGNS FOLLOW A STRAIGHT THREAD. DO NOT ATTEMPT TO FOLLOW THE PATTERN ON A PRINTED FABRIC SINCE PRINTS OFTEN DO NOT FOLLOW A CROSSWISE THREAD EXACTLY.

METHOD 4: RAVEL THE THREADS ON THE CUT EDGE UNTIL ONE THREAD PULLS CONTINUOUSLY FROM ONE SELVAGE TO THE OTHER. THE CROSSWISE GRAIN WILL THEN BE THREAD-PERFECT. IF THE FABRIC WAS CUT VERY UNEVENLY, YOU MAY HAVE A PROBLEM WITH TANGLED THREADS. IF THIS HAPPENS, JUST TRIM THE TANGLED THREADS.

ONCE YOU HAVE TRUE CROSSWISE THREADS ON THE ENDS YOU CAN CHECK TO SEE IF YOUR FABRIC IS STRAIGHT IN ONE OF THESE WAYS:


IF YOUR FABRIC IS OFF-GRAIN ONE HALF INCH OR LESS, YOU DO NOT NEED TO CORRECT IT. HOWEVER, SOME FABRICS ARE OFF-GRAIN THREE OR FOUR INCHES OR MORE. THIS IS SERIOUS AND THE FABRIC DEFINITELY NEEDS STRAIGHTENING. THERE ARE THREE METHODS FOR STRAIGHTENING FABRIC. IF ONE METHOD DOES NOT WORK FOR YOU, TRY ONE OF THE OTHERS OR BOTH.
METHOD 1: IF THE FABRIC IS ONLY SLIGHTLY OFF-GRAIN, IT MAY BE STRAIGHTENED BY PULLING. FABRIC THAT IS PULLED ON A TRUE BIAS STRETCHES. TO STRAIGHTEN, PULL THE FABRIC ON THE TRUE BIAS HOLDING THE SHORTER CORNER. CONTINUE TO PULL ALONG THE SELVAGE EDGE AT A BIAS UNTIL THE LENGTHWISE AND CROSSWISE THREADS ARE AT RIGHT ANGLES. FABRICS WITH A SOFT FINISH AND WEAVE ARE BEST SUITED TO STRAIGHTENING IN THIS WAY.

METHOD 2: FIRMLY WOVEN AND FINISHED FABRICS OFTEN DO NOT STRAIGHTEN BY PULLING BUT MAY BE AFFECTED BY MOISTURE. WITH THE CROSSWISE EDGES AND SELVAGE EDGES MATCHED, PIN OR BASTE TOGETHER. DAMPEN BOTH LAYERS OF THE FABRIC WITH A DAMP SPONGE OR CLOTH. "SQUARE UP" THE GRAIN BY SMOOTHING AND SHAPING THE FABRIC GENTLY WITH YOUR HANDS. ALLOW THE FABRIC TO LIE FLAT UNTIL IT IS NEARLY DRY. COMPLETELY DRY THE FABRIC BY IRONING, TAKING CARE TO MOVE THE IRON STRAIGHT WITH THE CROSSWISE OR LENGTHWISE GRAIN.

METHOD 3: IF YOUR FABRIC NEEDS PRESHRINKING, YOU CAN DO THIS TOGETHER WITH THE STRAIGHTENING OF THE FABRIC. FOLD THE FABRIC IN HALF LENGTHWISE AND BASTE ALL AROUND. THOROUGHLY SATURATE THE FABRIC IN WARM WATER FOR 30 MINUTES. UNFOLD THE FABRIC AND LAY ON A FLAT SURFACE TO DRY OR DRY IN THE DRYER; DO NOT REMOVE THE BASTING AND DO NOT HANG THE FABRIC TO DRY OR THE THREADS MAY BE PULLED OFF-GRAIN AGAIN.

IF YOUR FABRIC IS STILL OFF-GRAIN, PERHAPS IT HAS BEEN SET PERMANENTLY BY A FINISH AND WILL NOT CHANGE SHAPE THROUGH WASHING. FOR THIS REASON IT IS A GOOD IDEA TO CHECK YOUR FABRIC CAREFULLY IN THE STORE AND REFUSE TO BUY IT IF IT IS OFF-GRAIN. IF CONSUMERS REFUSE TO BUY SUB-STANDARD QUALITY FABRICS, THE MANUFACTURERS WILL BE FORCED TO USE MORE CARE IN PRODUCING THEIR GOODS.
AS THE FABRIC SAMPLES ARE PASSED AROUND, INDICATE ON YOUR TEST PAPER WHAT THE NUMBER IS POINTING TO. (35 POINTS)

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

IMAGINE THAT YOU ARE PLANNING TO SEW A BACKPACK AS YOUR FIRST SEWING PROJECT. LIST THREE FACTORS YOU WOULD CONSIDER WHEN BUYING FABRIC. (5 POINTS)
 AS THE FABRIC SAMPLES ARE PASSED AROUND, INDICATE ON YOUR TEST PAPER WHAT NUMBER IS POINTING TO. (35 POINTS)

1. Lengthwise Grain
2. Crosswise Grain
3. Selvage
4. Nap Fabric
5. Bias
6. Lengthwise Fold
7. Crosswise Fold

IMAGINE THAT YOU ARE PLANNING TO SEW A BACKPACK AS YOUR FIRST SEWING PROJECT. LIST THREE FACTORS YOU WOULD CONSIDER WHEN BUYING FABRIC. (5 POINTS)

1. How fabric would look once it was made into the pattern.
2. The sewing experience of the sewer (matching plaids, etc.)
3. How durable the fabric is.
VII. Lesson 7: Using a Commercial Pattern

A. Objectives:

1. The student will be better able to list the types of information found on a pattern envelope.

2. The student will be better able to determine the amount of fabric required for construction of a back pack.

3. The student will be better able to list the notions required for the construction of a back pack.

4. The student will be better able to follow pattern directions in the construction of a back pack.

B. Generalizations:

1. Precise interpretation of the yardage chart will insure the correct amount of fabric needed.

2. Use of the planned sequence for construction provided in the pattern guide sheet increases self-confidence and self-direction.

C. Pre-test ........................................... 82

D. Learning Activities:

1. Information Sheet: Pattern terminology ........................................... 86

2. Teacher Demonstration: Figuring yardage requirement.

3. Information Sheet: Figuring yardage requirement ........................................... 87

4. Discuss and List: Fabrics and notions suggested for back pack.

5. Read Instructions: Using the pattern guide sheet from the back pack, read through the instructions. Follow with a question-answer period ........................................... 90

E. Post-test ........................................... 96

F. Further Activities:

1. If you have not already done so, purchase the fabric and notions for your back pack.
Notes to the Teacher:

1. Explain to the visually impaired student that he/she might have to depend on another person to explain pattern details, fabric color, etc., and notions.
1. Define the following terms: (5 points)
   A. Guide sheet -

   B. Sewing notions -

   C. With nap -

   D. Without nap -

   E. Pattern view -

2. Indicate with a B (back) or F (front) as to where the pattern envelope information is found. (24 points)

   - Yardage chart
   - Pattern number
   - Ideas for trim
   - List of notions
   - Price of pattern
   - Size and figure type of pattern
   - Short description of the garment
   - Diagram showing each pattern piece
   - Name of the pattern company
   - Drawing of the back view of the garment
   - Picture of the garment and its views
   - Suggested fabrics
3. There are three things which you must know to determine the amount of fabric you will need to buy. They are:
   (6 points)
   (1) 
   (2) 
   (3) 

4. Consult the pattern envelope on the next page and list the notions required for the construction of a back pack.
   (5 points)
1. Define the following terms: (5 points)
   B. Sewing Notions - Items such as buttons, zippers, lace, thread which are required to construct a garment.
   C. With Nap - Fabric with a one-way design or weave.
   D. Without Nap - Fabric with an either-way design or weave.
   E. Pattern View - One of the garment styles that may be made from one pattern.

2. Indicate with a B (back) or F (front) as to where the pattern envelope information is found. (24 points)
   B. Yardage chart
   F & B. Pattern number
   F. Ideas for trim
   B. List of notions
   F. Price of pattern
   F. Size and figure type of pattern
   B. Short description of the garment
   B. Diagram showing each pattern piece
   F. Name of the pattern company
   B. Drawing of the back view of the garment
   F. Picture of the garment and its views
   B. Suggested fabrics
3. **There are three things which you must know to determine the amount of fabric you will need to buy. They are:**

   (6 points)

   (1) **How wide your fabric is.**
   (2) **Which view you are going to make.**
   (3) **Your size.**

4. **Consult the pattern envelope on the next page and list the notions required for the construction of a back pack.**

   (5 points)

   Decorative snap fasteners and ten "D" rings.
### Misses' or Men's Pants and Bag

NOTE: This envelope contains only one pattern...either the Misses' or the Men's pants and bag.

Metric Conversion Chart given on enclosed direction sheet.

Extra fabric needed to match plaids, stripes, one-way designs. Use nap yardage and nap layouts for one-way design fabrics. Not suitable for obvious diagonal fabrics.

<table>
<thead>
<tr>
<th>Standard Body Measurements</th>
<th>Waist</th>
<th>Hip-9&quot; below waist</th>
<th>Misses</th>
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<tr>
<td>44&quot; or 45&quot; without nap</td>
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<td>2 1/4</td>
<td>2 1/4</td>
<td>2 1/2</td>
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Fly interfacing - 1/4 yard of 25", 32", 35" or 36" woven or non-woven, fusible or non fusible.

Bag - One Size - Fabric with or without nap; 2 1/4 yds, 35"36", 1-3/4 yds, 44"45", 1 1/2 yds, 54".

Garment Measurements
Finished pants length at side seam from upper edge of waistband

<table>
<thead>
<tr>
<th>Bottom Width of Pants Leg</th>
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<th>22</th>
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(c) 1975 Simplicity Pattern Co., Inc.
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<tr>
<td>44” or 45” without nap</td>
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<td>1 7/8</td>
<td>2 1/4</td>
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<tr>
<td>54”</td>
<td></td>
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</tbody>
</table>

*FABRIC REQUIRED:
*36”, OR 38” WITH OR WITHOUT NAP
*44” OR 45” WITH OR WITHOUT NAP
54” – WITH OR WITHOUT NAP

*FLY INTERFACING – WOVEN OR NON-WOVEN, FUSIBLE OR NON-FUSIBLE.
25”, 30”, 35” OR 36” – 1/4 YD.

*Bag – One Size – Fabric with or without nap: 2 1/4 YDS. 35”36”, 1 3/4 YDS. 44”45”, 1 1/2 YDS. 54”.

**Garment Measurements**

**Finished Pants Length at Side Seam from Upper Edge of Waistband**

<table>
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<tr>
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</tbody>
</table>

**Sewing Notions – Thread. Pants: 11” Trouser zipper, three 5/8” buttons. Bag: Decorative snap fastener, four #9 rings for flap straps, four #10” rings for back straps, two “D” rings for shoulder strap.**

**Misses’ or Men’s Pants and Bag:** The top-stitched pants with fly front zipper, waistband and self carriers have front pockets and back patch pockets with buttoned flaps. The top-stitched one size bag with flap fastened to bag with self straps, loops and “D” rings has side pocket with snap fastened flap. The bag can be made with or without self fabric adjustable shoulder strap and self fabric back straps fastened with self loops and “D” rings.

**Suggested Fabrics:** Denim, Brushed Denim, Chino, Heavy Cotton Fabric, Canvas, Duck, Poplin.
1. **Pattern View** - One of the garment styles that may be made from one pattern.

2. **With Nap** - Fabric with a one-way design or weave.

3. **Without Nap** - Fabric with an either-way design or weave.

4. **Sewing Notions** - Items such as buttons, zippers, lace, thread which are required to construct a garment.

AFTER YOU HAVE YOUR PATTERN, YOU WILL FIND A WEALTH OF INFORMATION ON THE PATTERN ENVELOPE. INFORMATION ON THE ENVELOPE FRONT WILL INCLUDE:

- THE PATTERN NUMBER
- NAME OF THE PATTERN COMPANY
- PICTURE OF THE GARMENT AND ITS VIEWS
- IDEAS FOR USE OF TRIM AND ACCESSORIES
- SIZE AND FIGURE TYPE OF PATTERN
- PRICE OF PATTERN

NEXT, LOOK AT THE BACK OF THE PATTERN ENVELOPE. INFORMATION ON THE ENVELOPE BACK WILL BE SUCH THINGS AS:

- PATTERN NUMBER
- A DRAWING OF THE BACK VIEW OF THE GARMENT
- A SHORT DESCRIPTION OF THE GARMENT
- A DIAGRAM SHOWING EACH PATTERN PIECE
- A LIST OF NOTIONS
- SUGGESTED FABRICS
- A CHART FOR DETERMINING THE AMOUNT OF FABRIC REQUIRED.

TO USE THIS CHART, YOU MUST KNOW THREE THINGS: (1) HOW WIDE YOUR FABRIC IS, (2) WHICH VIEW YOU ARE GOING TO MAKE, AND (3) YOUR SIZE AND FIGURE TYPE. TO DETERMINE HOW MUCH FABRIC YOU WILL NEED TO BUY, DRAW A LINE ACROSS FROM THE CORRECT FABRIC WIDTH AND DOWN FROM THE PATTERN SIZE, WHERE THE TWO LINES MEET IS THE AMOUNT OF FABRIC YOU NEED. PRACTICE ON THE FABRIC CHART ON THE NEXT PAGE. HOW MUCH FABRIC DO YOU NEED IF:

1) YOU ARE MAKING PANTS, THE FABRIC IS 44" WITH NAP, AND YOUR PATTERN IS A MISSES SIZE 12?

2) YOU ARE MAKING PANTS, THE FABRIC IS 54" WITHOUT NAP AND YOUR PATTERN IS A MENS' SIZE 40?

3) YOU ARE MAKING THE BACK PACK, AND THE FABRIC IS 36"?
SIMPLICITY 7164  17 PIECES GIVEN

**MISSES' OR MEN'S PANTS AND BAG**

**NOTE:** This envelope contains only pattern...either the misses' or the men's pants and bag.

**METRIC CONVERSION CHART** given on enclosed direction sheet:

Extra fabric needed to match plaids, stripes, one-way designs.
Use nap yardage and nap layouts for one-way design fabrics.
Not suitable for obvious diagonal fabrics.

<table>
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<tr>
<th>Standard Body Measurements</th>
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**Fabric Required**

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<td>2 1/4</td>
</tr>
</tbody>
</table>

Fly interfacing - 1/4 yard of 25", 32", 35" or 36" woven or non-woven, fusible or non fusible.

Bag - One Size - Fabric with or without nap; 2 1/4 yds. 35"-36", 1 3/4 yds. 44"-45", 1 1/2 yds. 54".

**Garment Measurements**

Finished pants length at side seam from upper edge of waistband

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<tr>
<th>Bottom Width of Pants Leg</th>
</tr>
</thead>
<tbody>
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</table>

Fly Interfacing - Woven or non-woven, fusible or non fusible.

| Bag - One Size - Fabric with or without nap, 2 1/4 yds. 35”36”, 1 3/4 yds. 44”45”, 1 1/2 yds. 54” |
|-----------------------------------------------|-----------------------------------------------|
| Garnet Measurements                        |
| Finished pants length at side seam from upper edge of waistband | 43 1/2 | 43 3/4 | 44 | 44 1/4 |
| Bottom width of pants leg                  | 20 3/4 | 21 1/4 | 21 3/4 | 22 1/4 |

Sewing notions - Thread. Pants: 11” trouser zipper, three 5/8” buttons. Bag: Decorative snap fastener, four "D" rings for flap straps, four "D" rings for back straps, two "D" rings for shoulder strap.

Misses' or Men's Pants and Bag: The top-stitched pants with fly front zipper, waistband, and self carriers have front pockets and back patch pockets with buttoned flaps. The top-stitched one size bag with flap fastened to bag with self straps, loops and "D" rings. Has side pocket with snap fastened flap. The bag can be made with or without self fabric adjustable shoulder strap and self fabric back straps fastened with self loops and "D" rings.

Suggested Fabrics: Denim, Brushed Denim, Chino, Heavy Cotton Fabric, Canvas, Duck, Poplin.
PATTERN GUIDE FOR BACK PACK

NOTE: THE BAG CAN BE MADE WITH OR WITHOUT THE BACK STRAPS AND LOOPS AND SHOULDER STRAP AND LOOP.

UNIT 1
PREPARE BAG

STITCH DOUBLE NOTCHED EDGES OF BAG SECTION H.

MACHINE-STITCH ALONG SEAM LINE ON LONG EDGES BETWEEN SMALL DOTS AND NOTCH.

CLIP TO MACHINE-STITCHING, AS SHOWN.

UNIT 2
POCKET AND POCKET FLAP

A- PRESS UNDER 1/4" (6 MM) ON UPPER EDGE OF POCKET WITH MEDIUM DOTS. TURN UPPER AND LOWER EDGES OF POCKET TO INSIDE ALONG SEAM LINE; PRESS. TOP STITCH 1/4" (6 MM) FROM UPPER EDGE.

B- ON OUTSIDE, PIN POCKET TO RIGHT BAG H ALONG POCKET LINE, MATCHING MEDIUM DOTS, HAVING RAW EDGES EVEN, AS SHOWN.

MACHINE-BASTE RAW EDGES TOGETHER. TOP STITCH 1/4 (6 MM) FROM LOWER EDGE.

C- WITH RIGHT SIDES TOGETHER, STITCH FACING TO FLAP; LEAVING STRAIGHT EDGE OPEN. TRIM SEAM; CLIP CURVES.

(c) 1975 SIMPLICITY PATTERN CO., INC.
D- TURN FLAP; PRESS.
MACHINE- BASTE RAW EDGES TOGETHER.
TOP-STITCH 1/4" (6 MM) FROM FINISHED EDGE.

E- ON OUTSIDE, PIN FLAP ALONG FLAP LINE ABOVE POCKET, AS SHOWN.
STITCH ALONG SEAM LINE ON FLAP.
TRIM RAW EDGE CLOSE TO STITCHING.
PRESS FLAP DOWN.
TOP-STITCH 1/4" (6 MM) FROM SEAM.
FASTEN FLAP TO POCKET WITH A SNAP FASTENER (SEE INSTRUCTIONS WITH FASTENER).

UNIT 3

Loops

PREPARE TWO LOOPS M FOR BACK STRAPS, AS FOLLOWS:

A- FOLD LOOP IN HALF, LENGTHWISE, WITH RIGHT SIDES TOGETHER.
STITCH LONG EDGE. TRIM SEAM.

B- TURN LOOP; PRESS.
ON OUTSIDE, TOP-STITCH 1/4" (6 MM) FROM LONG EDGES.

C- SLIP "D" RINGS ONTO LOOP.
FOLD LOOP IN HALF. BASTE WITH RAW EDGES EVEN.
STITCH 1/2" (1.3 CM) FROM FOLD.

D- ON OUTSIDE, BASTE LOOPS TO ONE BAG SECTION, MATCHING SMALL DOTS.
THIS IS THE BACK OF YOUR BAG.)
UNIT 4

STITCHING BAG SECTIONS TOGETHER

WITH RIGHT SIDES TOGETHER, PIN BAG BACK N TO BAG SECTION H, MATCHING SMALL DOTS. STITCH. PRESS SEAM OPEN.

NOW SEW ANOTHER BAG SECTION N TO H IN SAME MANNER. THIS IS THE FRONT OF BAG.

UNIT 5

FLAP

A-WITH RIGHT SIDES TOGETHER, STITCH FACING TO FLAP, LEAVING NOTCHED EDGES OPEN. TRIM SEAM; CLIP CURVES.

B-TURN FLAP; PRESS. MACHINE-BASTE RAW EDGES TOGETHER. TOP-STITCH 1/4" (6 MM) FROM FINISHED EDGES.

C-TURN BAG RIGHT SIDE OUT. ON OUTSIDE, WITH RIGHT SIDES TOGETHER, PIN FLAP TO THE BACK OF BAG, MATCHING MEDIUM DOTS. STITCH.
Unit 6
Facing

A- To make bag facing, prepare and sew remaining bag sections, H and N together, same as for bag, leaving an opening in one seam, as shown.

B- With right sides together, place bag in facing, matching seams, having raw edges even at upper edge. Stitch upper edges together. Trim seam.

C- Turn bag right side out through opening in seam.

Slip-stitch opening edges of facing together.

Slip facing into bag.

Top-stitch 1/4" (6 mm) from upper edge of bag and flap seam.

Unit 7
Loops

Prepare two loops R for front straps and one loop R for shoulder strap, as follows:

A- Fold loop in half, lengthwise, with right sides together. Stitch long edge and end with small dots. Trim seam and corners.
B-Turn loop; press on outside, top-stitch 1/4" (6 mm) from long edges.

C-Slip "D" rings onto loop, folding along fold line; pin. Stitch 1/2" (1.3 cm) from fold.

D-On outside, pin loops to flap and left bag section, matching small dots, as shown.

Stitch along stitching lines on loops and close to lower edge through all thicknesses, as shown.

UNIT 8
Front, back and shoulder straps
Prepare front straps S, back straps T or shoulder AX, as follows:

A-Fold strap in half, lengthwise, with right sides together. Stitch, leaving an opening to turn. Trim seam and corners.
B - Turn strap; press. Slip-stitch opening. Top-stitch 1/4" (6 mm) from long edges and ends without small dots.

C - On outside, pin two straps to bag front, matching small dots. Stitch along stitching lines on straps and close to lower edge through all thicknesses, as shown.

D - On outside, pin two straps to back, matching small dots and stitch as front straps. On outside, pin shoulder strap ax to right side of bag, matching small dots and stitch as front straps.
1. LIST THE TWELVE ITEMS OF INFORMATION FOUND ON A PATTERN ENVELOPE. (24 POINTS)

(A) INSTRUCTIONS FOR STEP-BY-STEP CONSTRUCTION
(B) WITH NAP
(C) SEWING NOTIONS
(D) GUIDE SHEET
(E) WITHOUT NAP
(F)
(G)
(H)
(I)
(J)
(K)
(L)

2. MATCH THE FOLLOWING: (5 POINTS)

___ A. PATTERN VIEW 1. INSTRUCTIONS FOR STEP-BY-STEP CONSTRUCTION
___ B. WITH NAP 2. ITEMS SUCH AS BUTTONS, ZIPPERS, LACE
___ C. SEWING NOTIONS 3. FABRIC WITH ONE-WAY DESIGN
___ D. GUIDE SHEET 4. FABRIC WITH AN EITHER-WAY DESIGN
___ E. WITHOUT NAP 5. ONE OF THE GARMENT STYLES THAT MAY BE MADE FROM ONE PATTERN.
3. Describe how you would determine how much fabric to buy for a particular pattern? (6 points)

4. List the notions you will need to construct your back pack. (5 points)
1. List the twelve items of information found on a pattern envelope. (24 points)
(A) Yardage chart
(B) Pattern number
(C) Ideas for trim
(D) List of notions
(E) Price of pattern
(F) Size and figure type of pattern
(G) Short description of garment
(H) Diagram showing each pattern piece
(I) Name of pattern company
(J) Drawing of the back view of the garment
(K) Picture of garment and views
(L) Suggested fabrics

2. Match the following: (5 points)
   5. A. Pattern View
   3. B. With Nap
   2. C. Sewing notions
   1. D. Guide sheet
   4. E. Without Nap

   1. Instructions for step-by-step construction
   2. Items such as buttons, zippers, lace
   3. Fabric with one-way design
   4. Fabric with an either-way design
   5. One of the garment styles that may be made from one pattern
3. **Describe how you would determine how much fabric to buy for a particular pattern?** (6 points)

   (1) **Find out how wide fabric is**

   (2) **Decide which view to use**

   (3) **Find out pattern size**

   Draw a line across from the correct fabric width and down from the pattern size. Where two lines meet is the amount of fabric needed.

4. **List the notions you will need to construct your backpack.** (5 points)

   Decorative snap fastener and 10 "D" rings.
VIII. Lesson 8: Laying and Cutting Out a Pattern

A. Objectives:

1. The student will be better able to identify pattern symbols and markings.
2. The student will be better able to choose the correct pattern layout according to the fabric width, pattern view, and design or nap of fabric.
3. The student will be better able to lay out the pattern on fabric according to the guide sheet of the selected pattern.
4. The student will be better able to cut out the selected pattern.
5. The student will be better able to transfer pattern markings from the pattern to the fabric.

B. Generalizations:

1. Choice of layout depends on pattern view desired, width of fabric, and design or nap of fabric.
2. Smooth, clean-cut fabric edges make machine sewing easier and more accurate.
3. Pattern markings assist in the construction of an article.

C. Pre-test

D. Learning Activities:

1. Information Sheet: Pattern markings and terminology
2. Teacher Demonstration: Choosing a pattern layout, laying out and pinning a pattern.
3. Information Sheet: Selecting the correct layout and laying out the pattern
4. Information Sheet: (Visually impaired student) "Suggestions for Using Commercial Patterns"
5. Lab: Students lay and pin their pattern to the fabric.
6. Teacher Demonstration: Correct procedure for cutting out pattern pieces.
7. **Information Sheet:** Cutting out a pattern and transferring pattern markings...

8. **Lab:** Students cut out their pattern pieces.

9. **Teacher Demonstration:** Display materials and tools used to transfer pattern markings to fabric. Demonstrate different methods of transferring markings.

10. **Lab:** Students transfer pattern markings choosing the method most suited to their fabric.

E. Post-test

F. Further Activities:

1. Help another student with the laying, cutting, or marking of pattern. Remember that the other student must do the tasks himself.

G. Suggested Resources:


*Notes to the Teacher:

1. The pre-and post-test for this lesson measures only the comprehension level. The application level for this lesson will be measured by a psychomotor checklist during the clothing construction lab.

2. The pattern used in this lesson is Simplicity #7164. It may be ordered by mail from:

   Simplicity Pattern Company, Inc.
   901 Wayne Street
   Niles, Michigan 49121

   The price is $1.50 plus 25¢ postage and handling. Enclose check or money order.
LAYING AND CUTTING OUT A PATTERN

PRE-TEST

40 Possible Points

INDICATE T FOR THE TRUE STATEMENTS AND F FOR THE FALSE STATEMENTS. (22 POINTS)

1. Pattern dots indicate the right side of the fabric. T

2. The cutting line is a dark, black line around the pattern. It shows you where to cut. T

3. The seam allowance marking is found 5/8" on the outside of the cutting line. T

4. Notches are square markings which aid you when joining pattern pieces. T

5. To pin is to temporarily join two pieces of fabric with straight pins. T

6. The wrong side of the fabric will become the inside of the article you are sewing. T

7. Directional arrows indicate the direction in which you should sew and press each seam. T

8. The straight grain arrow is curved at the ends. T

9. The pattern layout diagram is a guide which shows you how to lay your pattern pieces on the fabric. T

10. The right side of the fabric is the side of the fabric you want people to see. It will become the outside of the article you are sewing. T

11. The lay on fold arrow is a straight arrow. T

12. What three things determine which pattern layout you will use? (6 POINTS)

NAME

CLASS

DATE
13. List the steps you would go through when pinning a pattern piece to the fabric. (5 points)

14. List three methods used to transfer pattern markings. (6 points)

15. List one thing to remember when cutting out pattern pieces. (1 point)
Laying and Cutting Out a Pattern

PRE-TEST KEY
40 Possible Points

Indicate T for the true statements and F for the false statements. (22 points)

F 1. Pattern dots indicate the right side of the fabric.
T 2. The cutting line is a dark, black line around the pattern. It shows you where to cut.
F 3. The seam allowance marking is found 5/8" on the outside of the cutting line.
F 4. Notches are square markings which aid you when joining pattern pieces.
T 5. To pin is to temporarily join two pieces of fabric with straight pins.
T 6. The wrong side of the fabric will become the inside of the article you are sewing.
T 7. Directional arrows indicate the direction in which you should sew and press each seam.
F 8. The straight grain arrow is curved at the ends.
T 9. The pattern layout diagram is a guide which shows you how to lay your pattern pieces on the fabric.
T 10. The right side of the fabric is the side of the fabric you want people to see. It will become the outside of the article you are sewing.
F 11. The lay on fold arrow is a straight arrow.

12. What three things determine which pattern layout you will use? (6 points)
   A. Pattern view
   B. Width of fabric
   C. Pattern size
13. **List the steps you would go through when pinning a pattern piece to the fabric.** (5 points)
   A. Pin grainline on lay on fold arrow.
   B. Smooth pattern with your hand.
   C. Smooth from arrow to each corner.
   D. Pin each corner.
   E. Place pins along curves and edges as needed.

14. **List three methods used to transfer pattern markings.** (6 points)
   A. Tailors' Tacks
   B. Tailors' Chalk and Pins
   C. Tracing Wheel and Carbon Paper

15. **List one thing to remember when cutting out pattern pieces.** (1 point)
   Use long, even strokes.
<table>
<thead>
<tr>
<th>Pattern Making</th>
<th>Picture</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Place on Straight Grain Arrow</td>
<td>← →</td>
<td>Indicates that you must place pattern piece on straight grain.</td>
</tr>
<tr>
<td>Lay on Fold Arrow</td>
<td>← →</td>
<td>Indicates that you must place pattern piece on fold of fabric.</td>
</tr>
<tr>
<td>Cutting Line</td>
<td></td>
<td>Outlines each pattern piece and shows you where to cut.</td>
</tr>
<tr>
<td>Seam line Marking</td>
<td></td>
<td>Broken line 5/8&quot; inside of cutting line unless otherwise indicated. Shows where sewing machine will be done</td>
</tr>
<tr>
<td>Directional Arrows</td>
<td>→ → →</td>
<td>Arrows along seam line which show direction in which to sew and press.</td>
</tr>
<tr>
<td>Pattern Marking</td>
<td>Picture</td>
<td>Purpose</td>
</tr>
<tr>
<td>----------------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>Notches</td>
<td><img src="diamond.png" alt="Notches" /></td>
<td>Diamond numbered markings at the edge of pattern piece.</td>
</tr>
<tr>
<td>Dots</td>
<td><img src="dot.png" alt="Dots" /></td>
<td>Mark button placement, buttonholes, pocket placement, etc.</td>
</tr>
</tbody>
</table>

**Pattern Layout Diagram** - Shows how each pattern piece is laid on the fabric.

**Right Side of Fabric** - Side of fabric which you want to become outside of article you are sewing.

**Wrong Side of Fabric** - Side of fabric which will become inside of article you are sewing.

**Pin** - To hold two pieces of fabric together with straight pins.
SELECTING THE CORRECT PATTERN LAYOUT

Your pattern guide will give you information on how to use your pattern. One source of information is the pattern layout diagram. The pattern layout diagram will show you how each pattern piece is to be placed on the fabric.

Three things determine which pattern layout you will use. They are: (1) the pattern view you have chosen, (2) the width of your fabric, and (3) your pattern size. Find and circle your correct pattern layout so you can refer to it easily.

KINDS OF FABRIC FOLD

Once you have chosen and circled the correct pattern layout, study the diagram to see how the fabric has been placed on the table. Although most pattern layouts show folded fabric, some require the fabric to be open.

If your fabric is folded, it will more than likely be folded one of these three ways:

1. CROSSWISE CENTER FOLD - The raw ends of the fabric are matched. The fold follows a crosswise thread.

2. LENGTHWISE CENTER FOLD - The selvages of the fabric are matched. The fold follows a lengthwise thread.

3. LENGTHWISE OFF-CENTER FOLD - One selvage edge is an equal distance from the fold. The fold follows a lengthwise thread.

After you have folded your fabric as shown on the layout diagram, look at the diagram to see if the fold should be
PLACED NEXT TO YOU, AT THE TOP OF THE TABLE, OR TO YOUR LEFT OR RIGHT. PLACING YOUR FABRIC AS INDICATED ON THE DIAGRAM WILL MAKE LAYING OUT YOUR PATTERN EASIER.

LAYING THE PATTERN

IN ORDER FOR YOUR GARMENT TO BE GRAIN-PERFECT, BOTH YOUR FABRIC AND PATTERN PIECES MUST BE ON-GRAIN. ON EACH OF YOUR PATTERN PIECES YOU WILL FIND ONE OF TWO MARKINGS WHICH WILL HELP YOU PLACE YOUR PATTERN PIECES ON GRAIN. THE "PLACE ON STRAIGHT GRAIN" MARKING IS A HEAVY BLACK ARROW WITH TWO POINTS. THE OTHER IS A "LAY ON FOLD" ARROW WHICH IS AN ARROW WITH POINTS CURVED TOWARDS THE FOLD LINE EDGE.

Once the distances are the same, pin the other end of the arrow also.

The line at the edge of a "lay on fold" arrow must go right along the fabric fold. If you place the line a 1/2 inch away from the fold, the pattern piece will be an inch larger than required.

Pinning the Pattern to the Fabric

Always work on a flat, smooth surface when pinning a pattern to the fabric. Never lift the fabric off the work surface when pinning as this may pull the fabric off-grain.

Follow these steps when pinning a pattern to the fabric:

(1) Pin the grainline arrow or lay on fold arrow. Make sure they are on grain.

(2) With your hand, smooth out the pattern away from the grainline or lay on fold arrow.

(3) Smooth from arrow to each corner. Pin with points going towards the corner.

(4) Place pins along curves and edges as needed. Pins should point towards the cutting line. Use only as many pins as needed to hold pattern securely.

Lay and pin each pattern piece as illustrated in your pattern layout. After you have completed this, have your teacher check it.
"SUGGESTIONS FOR ADAPTING COMMERCIAL PATTERNS"

THE COMMERCIAL PATTERN WILL BE EASIER FOR YOU TO USE IF A FEW ADAPTATIONS ARE MADE. ASK A FRIEND OR YOUR TEACHER TO MAKE THESE CHANGES ON EACH PATTERN PIECE YOU WILL USE.

BEFORE CUTTING ANY PIECE, BACK IT WITH A REINFORCING PAPER SUCH AS WHITE SHELF PAPER. MACHINE STITCH ALL THE SEAM LINES AND FOLD LINES WITH A DOUBLE THREAD OR HEAVY DUTY THREAD TO HOLD THE TWO TOGETHER. CUT THE PATTERN PIECE OUT EXACTLY ON THE CUTTING LINE THROUGH BOTH THICKNESSES OF PAPER.

THE "STRAIGHT OF GRAIN" ARROW AND "LAY ON FOLD" ARROW CAN BE MARKED IN ONE OF THREE WAYS. (1) THEY CAN BE MARKED WITH STAPLES PLACED VERTICALLY ALONG THE ARROW AND CROSSED WITH A HORIZONTALLY PLACED STAPLE AT BOTH ENDS. (2) GLUE A CORD OR YARN THE FULL LENGTH OF THE ARROW. (3) THE ARROW CAN BE STITCHED WITH A DOUBLE THREAD OR HEAVY DUTY THREAD.

YOU MAY ALSO CHOOSE TO USE A COMBINATION OF THESE METHODS.

SMALL AND LARGE DOTS ON THE PATTERN PIECES CAN EITHER BE PUNCHED OUT WITH A PAPER PUNCH OR MARKED WITH REINFORCEMENT CIRCLES. THE REINFORCEMENT CIRCLES WOULD PROBABLY BE THE EASIEST TO USE ON SUCH MARKINGS AS DARTS WHERE THE PAPER PUNCH MAY NOT REACH.

TO DISTINGUISH A FOLD LINE FROM A SEAM LINE, A SLIP OF PAPER BRAILLED WITH THE INSTRUCTIONS CAN BE TAPED NEAR THE LINE.
Each pattern piece can be marked for identification with a brailled paper taped to the piece. The paper should give the pattern company name and number, size, pattern letter and part name, and instruction as "cut 1".

Since you may not be able to follow the pattern layout suggested by the pattern company, begin by placing the larger pattern pieces on the fabric. If the pattern piece is to be laid on grain, remember to measure the distance from each end of the arrow to the selvage to make sure they are the same. You may decide to remeasure to make sure the distance is the same. Smooth out the pattern from the grainline arrow to each corner and pin. As you pin, push pin points through the paper again to the underside of the pattern. This will prevent snagging your fingers when cutting out the material. After all the larger pieces have been laid, place the smaller pattern pieces on the fabric. Again pay strict attention to the "lay on straight grain" and "lay on fold" markings. Pin each pattern piece securely, especially at pattern corners and on curves. Check to be sure the pins do not extend over the pattern edge since this would interfere with the shears when cutting out the pattern.

Although some people use surgical scissors (bent-handle scissors) for cutting out patterns, you may find you prefer to use regular shears. Use your left fingers as a guide to feel the cutting edge and any special cutting features such as notches and curves. Since the blades of the shears should never be completely closed when cutting out a pattern, there
WILL BE NO DANGER OF YOU CUTTING YOUR FINGERS.

AFTER ALL PATTERN PIECES ARE CUT OUT, YOU MAY TAILOR TACK PATTERN MARKINGS OR USE SMALL SAFETY PINS TO MARK THEM. REMEMBER THAT ALL MARKINGS SHOULD BE ON THE WRONG SIDE OF THE FABRIC. ALSO, BY PLACING SAFETY PINS ON THE WRONG SIDE OF LARGE SCRAPS OF FABRIC, IT WILL BE EASIER TO IDENTIFY THE WRONG SIDE OF THE FABRIC IF FACINGS OR BIAS STRIPS NEED TO BE CUT OUT LATER.
Cutting Out a Pattern

After your teacher has checked your pattern layout, you are ready to start cutting out your pattern. Using sharp shears, cut the fabric with long, even strokes. Keep the fabric flat on the table. Simply slide the lower blade of your shears under the edge of the fabric. Lay the fingers of your other hand lightly on the fabric a little inside the cutting line. Make a long, even stroke and slide the shears forward into the cut. To keep the cutting line smooth, begin cutting exactly where the other stroke ended. When you come to a notch, cut right up to the notch and then outward in a triangular shape. Notches cut inward are harder to see and are more likely to ravel into the seamline. Double and triple notches are usually cut as one large notch.

Keep all pattern pieces pinned to fabric after cutting so pattern markings can be transferred.

Transferring Pattern Markings

Depending on your fabric and construction task, you must choose one of three methods for transferring pattern markings.

The three methods are:

(1) Tracing Wheel and Carbon Paper - Since the carbon marks do not always come off, choose a carbon which blends well with your fabric. Place two sheets of tracing paper with waxy sides to the wrong side of the fabric. Using the tracing wheel and a ruler, trace along the lines you want transferred. A dot can be marked with an X. If you choose this
METHOD, PROTECT THE WORK AREA WITH SEVERAL MAGAZINES AS THE TRACING WHEEL MIGHT HARM THE SURFACE.

(2) TAILORS' TACKS - WITH A DOUBLE STRAND OF CONTRASTING THREAD, TAKE THE STITCHES THROUGH BOTH LAYERS OF FABRIC AT THE POINT YOU WANT MARKED. LEAVE A LOOP AND TAILS AT BOTH ENDS OF THE THREAD. CUT THE LOOP AND CAREFULLY SPREAD THE TWO LAYERS OF FABRIC APART. CLIP THE THREADS BETWEEN THE LAYERS. THIS IS THE NEATEST WAY TO TRANSFER MARKINGS.

(3) TAILORS' CHALK AND PINS - THIS IS THE MOST TEMPORARY METHOD OF TRANSFERRING MARKINGS. PLACE A PIN THROUGH BOTH LAYERS OF FABRIC AT THE POINTS YOU WANT MARKED. CHALK THE FABRIC AT EACH PIN ON THE WRONG SIDE; REMOVE THE PATTERN AND CHALK MARK THE PINS ON THE TOP FABRIC LAYER. THIS METHOD SHOULD BE USED ONLY IF YOU ARE GOING TO SEW IMMEDIATELY AFTER CUTTING OUT THE PATTERN BECAUSE THE CHALK MARKS ARE EASILY RUBBED OFF.
LAYING AND CUTTING OUT A PATTERN

POST-TEST

40 POSSIBLE POINTS

1. WHAT THREE THINGS DETERMINE WHICH PATTERN LAYOUT YOU WILL USE? (6 POINTS)

2. LIST AND DESCRIBE THE THREE MOST COMMON FABRIC FOLDS. (6 POINTS)

3. EXPLAIN HOW YOU WOULD LAY A PATTERN PIECE WITH A "PLACE ON STRAIGHT GRAIN" MARKING. (5 POINTS)

4. EXPLAIN HOW YOU WOULD LAY AND PIN A PATTERN PIECE WITH A "LAY ON FOLD" MARKING. (5 POINTS)
5. Describe the correct technique for cutting out a pattern. (5 points)

6. List and explain three methods of transferring pattern markings. (6 points)

7. Identify the following pattern symbols and markings.
   A. 
   B. 
   C. 
   D. 
   E. 
   F. 
   G. 

Laying and Cutting Out a Pattern  

Post-test key

Name ______________________

Class ______________________

Date ______________________

40 Possible Points

1. WHAT THREE THINGS DETERMINE WHICH PATTERN LAYOUT YOU WILL USE? (6 POINTS)
   A. The pattern view you have chosen.
   B. The width of your fabric.
   C. Your pattern size.

2. LIST AND DESCRIBE THE THREE MOST COMMON FABRIC FOLDS. (6 POINTS)
   A. Crosswise center fold - raw edges of the fabric are matched.
   B. Lengthwise center fold - selvages of the fabric are matched.
   C. Lengthwise off-center fold - one selvage edge is an equal distance from the lengthwise fold.

3. EXPLAIN HOW YOU WOULD LAY A PATTERN PIECE WITH A "PLACE ON STRAIGHT GRAIN" MARKING. (5 POINTS)
   - Lay pattern piece on fabric so marking appears straight.
   - Pin one end of the arrow and measure from arrow to selvage.
   - Measure distance from other end of arrow to selvage.
   - Once the distances are the same, pin the other end of arrow.
   - With your hand, smooth out pattern away from straight grain arrow.
   - Smooth from arrow to each corner of pattern and pin.
   - Place pins along curves and edges as needed.

4. EXPLAIN HOW YOU WOULD LAY AND PIN A PATTERN PIECE WITH A "LAY ON FOLD" MARKING. (5 POINTS)
   - Lay and pin the line at the edge of the "lay on fold" arrow on the fabric fold.
   - With your hand, smooth out the pattern away from the "lay on fold" arrow.
   - Smooth from arrow to each corner of pattern and pin.
   - Place pins along curves and edges as needed.
5. Describe the correct technique for cutting out a pattern. (5 Points)

- Use sharp shears and cut the fabric with long, even strokes.
- Let material rest on table - do not lift it off the table.
- Lay fingers of your other hand lightly on fabric.
- Make a long, even stroke and slide the shears forward into the cut.
- Begin cutting exactly where the other stroke ended.

6. List and explain three methods of transferring pattern markings. (6 Points)

A. Tracing wheel and carbon paper - Place two sheets of tracing paper with waxy sides to the wrong side of the fabric. Using a tracing wheel, trace along lines you want transferred.

B. Tailors' Tacks - With a double strand of contrasting thread, take two stitches through both layers of fabric at the point you want marked. Leave a loop and tails at both ends of the thread. Cut the loop and carefully spread the two layers of fabric apart. Clip the threads between the layers. This is the neatest way to transfer markings.

C. Tailors' Chalk and Pins - This is the most temporary method of transferring markings. Place a pin through both layers of fabric at the points you want marked. Chalk the fabric at each pin on the wrong side. Remove the pattern and chalk mark the pins on the top fabric layer. This method should be used only if you are going to sew immediately after cutting out the pattern.

7. Identify the following pattern symbols and markings.

A. 
- Straight grainline arrow

B. 
- Directional arrows

C. 
- Notch

D. 
- Dot

E. 
- Cutting line

F. 
- Sewing line

G. 
- Lay on fold. arrow
IX. Lesson 9: Basic Clothing Construction

A. Objectives:

1. The student will be better able to explain and apply knowledge of clothing construction terms.

2. The student will be better able to produce and evaluate the construction of a back pack.

3. The student will be better able to individualize a back pack.

B. Generalizations:

1. The construction process is easier and faster when the sewer understands and applies knowledge of clothing construction terms.

2. Evaluating one's own sewing can contribute to improving sewing construction skills and increased ability to select ready-made articles.

3. Satisfaction and pride achieved during the construction and individualization of a back pack tends to influence one's attitude towards future sewing.

C. Pre-test

D. Learning Activities:

1. Information Sheet: Clothing construction terms

2. “Sewing Terms Bingo”: A game to review fabric and clothing construction terms

3. "Go Sew": A game to review small sewing equipment, sewing machine parts, fabric terms and clothing construction terms

4. Teacher Demonstration: Construction techniques.

5. Teacher Demonstration: Proper pressing techniques.

6. Information Sheet: Proper pressing techniques

7. Lab: Students construct and individualize their back packs.

8. Evaluation: Students exchange completed back packs and evaluate according to established standards. Follow with teacher evaluation of back packs.
9. **Psychomotor Checklist**: Checklist to evaluate psychomotor skills

10. **Comparison Lab**: Students compare their own back pack to a ready-made one. Compare cost, construction techniques, and finished appearance.

E. **Post-test**

F. **Further Activities**:

1. Construct another simple article on your own. See what techniques you have learned that also are used in the construction of other things.

G. **Suggested Resources**:


* **Notes to the Teacher**:

1. When demonstrating ironing and pressing techniques to the visually impaired student, have him/her find the iron by carefully following the cord to the handle of the iron.
1. RIGHT SIDE OF FABRIC
2. WRONG SIDE OF FABRIC
3. RAW EDGES
4. MACHINE BASTE
5. MACHINE STITCH
6. BACKSTITCH
7. DIRECTIONAL STITCHING
8. SEAM ALLOWANCE
9. SEAM LINE
10. TOP STITCH
B. 1. Pin A. Pattern marking for buttonholes
   2. Dots B. Invisible hand sewing
   3. Notches C. Piece of fabric used to cover raw edges
   4. Facing D. Cut away part of pattern marking
   5. Clip E. Piece of fabric used to cover selvage edge
   6. Trim F. To hold two pieces of fabric together with straight pins
   7. Press G. Flatten using up and down motion with an iron
   8. Slip-stitch H. Trimming seam allowance to different lengths
   9. Iron I. Triangular pattern marking
   10. Bevel J. Cut notches out of seam allowances
        K. Flatten using a sliding motion with an iron
        L. Cut away part of seam allowance
### Basic Clothing Construction

**Pre-Test Key**

40 Possible Points

**Match the following clothing construction terms with their definition:**

<table>
<thead>
<tr>
<th>A</th>
<th>1. Right Side of Fabric</th>
<th>A. Longest stitch on sewing machine</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>2. Wrong Side of Fabric</td>
<td>B. Reverse direction of stitching to secure thread ends</td>
</tr>
<tr>
<td>K</td>
<td>3. Raw Edges</td>
<td>C. Decorative stitch</td>
</tr>
<tr>
<td>G</td>
<td>5. Machine Stitch</td>
<td>E. Side of fabric you want people to see</td>
</tr>
<tr>
<td>B</td>
<td>6. Backstitch</td>
<td>F. To stitch with the grain</td>
</tr>
<tr>
<td>F</td>
<td>7. Directional stitching</td>
<td>G. To sew using length of stitch best of fabric</td>
</tr>
<tr>
<td>D</td>
<td>8. Seam Allowance</td>
<td>H. Embroidery</td>
</tr>
<tr>
<td>L</td>
<td>9. Seam Line</td>
<td>I. Side of fabric which will become inside of article</td>
</tr>
<tr>
<td>C</td>
<td>10. Top Stitch</td>
<td>J. To hold fabric together with pins</td>
</tr>
</tbody>
</table>

**K** Cut Edge of Pattern Piece

**L** Sewing Line 5/8" from edge of pattern piece
**1. Pin**

**A. Pattern marking for buttonholes**

**2. Dots**

**B. Invisible hand sewing**

**3. Notches**

**C. Piece of fabric used to cover raw edges**

**4. Facing**

**D. Cut away part of pattern marking**

**5. Clip**

**E. Piece of fabric used to cover selvage edge**

**6. Trim**

**F. To hold two pieces of fabric together with straight pins**

**7. Press**

**G. Flatten using up and down motion with an iron**

**8. Slip-stitch**

**H. Trimming seam allowance to different lengths**

**9. Iron**

**I. Triangular pattern marking**

**10. Bevel**

**J. Cut notches out of seam allowances**

**K. Flatten using a sliding motion with an iron**

**L. Cut away part of seam allowance**
1. **Pin** to hold two pieces of fabric together with straight pins. Pins should always be placed at a right angle to the seam line.

2. **Seam Allowance** - 5/8" inch, unless otherwise stated.

3. **Right Side of Fabric** - side of fabric you want people to see.

4. **Wrong Side of Fabric** - side of fabric which will become inside of article you are sewing.

5. **Raw Edges** - the cut edge of the pattern piece.

6. **Machine Baste** - to sew temporarily using longest stitch length on sewing machine - usually six stitches per inch. Thread ends are not fastened by backstitching.


8. **Backstitching** - to change direction of stitching in order to secure thread ends. Usually done 1/4" at beginning of seam and 1/4" at end of seam.

9. **Directional Stitching** - to stitch with the grain - usually from widest to narrowest portion of pattern.

10. **Seam Line** - sewing line 5/8" from edge of pattern piece.

11. **Facing** - piece of fabric used to cover raw edges - such as at the neckline of a dress.

12. **Clip** - to cut notches out of seam allowance to allow curved area to lie flat when turned.

13. **Trim** - to cut away part of seam allowances or extra fabric.

14. **Press** - to flatten with an iron - using an up and down rather than a sliding motion.

15. **Top-Stitch** - decorative stitching made on the right side of fabric.

16. **Slip-Stitching** - an invisible hand sewing for finishing hems or facing and for joining edges for opening.
17. **Iron** - To flatten with an iron using a sliding motion.
18. **Bevel** - To trim the seam allowance to different widths to reduce bulk.
Objective of the Game:
1. Student will review fabric and clothing construction terminology.

Supplies Needed:
- Slips of paper containing definition of terms
- Container for slips
- Master card for each game
- Playing card (one for each player)
- Scraps of fabric

Directions for Playing:
1. Sewing Terms Bingo is played like Bingo.
2. The object of the game is to get five connecting squares vertically, horizontally or diagonally.
3. Each player receives a playing card and writes or brailles his/her own arrangement of terms.
4. Scraps of fabric are distributed for use as markers of terms called.
5. The caller will draw a slip from the container and reads the definition.
6. The assistant takes the slip from the caller and checks each term as it is used on the master card.
7. If a player thinks his/her playing card has the term which goes with the definition called, he/she places a scrap of material on the square containing that term.
8. When a player has filled a complete row (vertically, horizontally, or diagonally), he calls Bingo.
9. The caller stops the game and checks the player's card with the master card.
10. If the player's card checks with the master card, he/she becomes caller and a new game is begun.

Persons Needed:
- Caller
- Assistant to check master card
- Players
**Sewing Terms Bingo**

Make your own arrangement of the following sewing terms on your Bingo card. As caller reads definition, cover the corresponding term with a piece of macaroni.

<table>
<thead>
<tr>
<th>B</th>
<th>I</th>
<th>N</th>
<th>G</th>
<th>O</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off grain</td>
<td>Raw edges</td>
<td>Lengthwise grain</td>
<td>Bias</td>
<td>Against grain</td>
</tr>
<tr>
<td>Grain</td>
<td>Machine baste</td>
<td>Trim</td>
<td>Notches</td>
<td>Iron</td>
</tr>
<tr>
<td>Fold of fabric</td>
<td>With grain</td>
<td>With nap</td>
<td>Machine stitch</td>
<td>Crosswise grain</td>
</tr>
<tr>
<td>Directional stitching</td>
<td>Seam allowance</td>
<td>Back-stitch</td>
<td>On grain</td>
<td>Crosswise fold</td>
</tr>
<tr>
<td>Clip</td>
<td>Selvage</td>
<td>Press</td>
<td>Lengthwise fold</td>
<td>Bevel</td>
</tr>
</tbody>
</table>
Sewing Terms Bingo Call Master

B Off-grain: Lengthwise and crosswise threads cross each other on a slant rather than at right angles.

B Grain: The lengthwise and crosswise threads of a fabric.

B Fold of fabric: Fabric folded with selvages even.

B Directional stitching: To stitch with the grain - usually from widest to narrowest portion of fabric.

B Clip: To cut notches out of seam allowance to allow curved area to lie flat when turned.
RAW EDGE: THE CUT EDGES OF THE PATTERN PIECE.

Machine Baste: TO SEAM TEMPORARILY USING LONGEST STITCH LENGTH ON SEWING MACHINE.

With Grain: THE DIRECTION IN WHICH THE FABRIC GRAIN RUNS.

Seam Allowance: 5/8 INCH UNLESS OTHERWISE STATED.

Selvage: NARROW, FIRM WOVEN EDGE ON BOTH LENGTHWISE EDGES OF A WOVEN FABRIC.
LENGTHWISE GRAIN: THE THREADS THAT RUN UP AND DOWN THE LENGTH OF A FABRIC PARALLEL TO THE SELVAGE.

TRIM: TO CUT AWAY PART OF THE SEAM ALLOWANCE OR EXTRA FABRIC.

WITH NAP: FABRICS SUCH AS CORDUROY, VELVET, SATIN, TWILL AND FABRICS WITH ONE-WAY DESIGNS.

BACKSTITCH: TO CHANGE DIRECTION OF STITCHING IN ORDER TO SECURE THREAD ENDS.

PRESS: TO FLATTEN WITH AN IRON USING AN UP AND DOWN RATHER THAN A SLIDING MOTION.
Bias: Any direction away from the lengthwise or crosswise grain.

Notches: Triangular markings at edge of pattern piece which are matched up when pinning two pattern pieces together.

On grain: Lengthwise and crosswise threads cross each other at perfect right angles.

Lengthwise fold: Fabric is folded on a lengthwise grain.

Against grain: The direction opposite to that in which the fabric grain runs.

Iron: To flatten with an iron using a sliding motion.

Crosswise grain: The threads that run across the fabric between the selvages.

Crosswise fold: Fabric folded on the crosswise grain.

Bevel: To trim the seam allowance to different widths to reduce bulk.
Objective of the Game:

1. Student will review small sewing equipment, sewing machine parts, fabric terms and clothing construction terms.

Number of Players: 4-6

Supplies Needed:

Playing board
Markers (different sized and types of buttons - eg: Shank, 2 hole flat, 4 hole flat, ball, cube, long oval, etc.)
One die
Question cards: (14) Yellow = small equipment (17) Blue = fabric terms
(18) Green = construction terms (23) Red = machine parts

Directions for Playing:

1. Place question cards on playing board. Four piles of cards are separated according to color and type.
2. Players place their buttons on "start".
3. Roll the die to determine who goes first; the highest number begins. Order of next turns moves to left of starter.
4. First player rolls die and moves number of spaces indicated. If he/she lands on a five point, he/she does not need to draw a card but gets one point. If player lands on any other square, the person to his/her right draws a card from the corresponding pile and gives the question. If the player answers correctly he/she gets 1 point. The card is placed at the bottom of the pile. If the player does not answer correctly the card goes to the bottom of the pile and the player gets no points. The correct answer is not given. Each player keeps track of his/her own points.
5. The first player to go past start gets 5 extra points.
6. The first player to reach 50 points is the winner.
Directions for Construction the "Go Sew" Game Board

Materials Needed:

1. One large sheet of tagboard 21" x 22 1/2".
2. Five rolls of 1 1/2" wide plastic mending tape: one roll each of red, green, white, blue and yellow.
3. One roll of 1/2" wide black plastic mending tape.
5. Black marking pen.

Included in Package:

1. Four sets of question cards.
2. Game instructions.

Construction of Board:

1. Place the name of the game in the center of the board.
2. Choose one color to be used for "start", the three corners and the free spaces. There should be only one free space on each side of the board.
3. With the mending tape, place 1 1/2" x 1 1/2" squares around the perimeter of the board alternating colors as shown on the illustration.
4. Using the black tape, outline the lower edge of the board as well as the upper edge of the colored tape.
5. Indicate the starting point and instructions on the other corners and free spaces with the letter transfers.
6. Make four placement boxes for the question cards. Do this by drawing around a question card with the black marker.
THE DEVELOPERS OF PATTERN GUIDE SHEETS USUALLY ASSUME THAT
YOU UNDERSTAND THE IMPORTANCE OF PRESSING DURING THE CLOTHING
CONSTRUCTION PROCESS. EXPERIENCED SEWERS KNOW THAT
LEAVING THE PRESSING UNTIL THE GARMENT IS COMPLETE MAY RESULT
IN A GARMENT WITH A "HOMEMADE" APPEARANCE. SO WHEN DO YOU
PRESS SEAMS? THE BASIC RULE IS TO PRESS EVERY SEAM BEFORE
IT IS JOINED OR CROSSED WITH ANOTHER SEAM.

EVERY SEAM MUST BE STITCHED AND PRESED IN THE DIREC-
TION OF THE FABRIC GRAIN. SEAMS THAT ARE SEWN OR PRESED
AGAINST THE GRAIN MAY STRETCH OR PUCKER AND BECOME HARD TO
MATCH EVENLY WITH ADJOINING PIECES. IF YOU ARE EVER IN
DOUBT AS TO WHICH DIRECTION TO SEW OR PRESS, CONSULT YOUR
PATTERN PIECE.

BELOW ARE A FEW PRESSING GUIDELINES:
1. FILL THE STEAM IRON WITH DISTILLED WATER.
2. TURN THE IRON TO THE DESIRED TEMPERATURE SETTING
AND ALLOW AMPLE TIME TO HEAT.
3. CHECK THE EFFECT OF THE TEMPERATURE AND MOISTURE ON
A SAMPLE OF FABRIC.
4. WHENEVER POSSIBLE, PRESS ON THE WRONG SIDE OF THE
FABRIC. IF YOU MUST PRESS ON THE RIGHT SIDE OF THE
FABRIC, USE A PRESS CLOTH. THIS WILL PREVENT THE
FABRIC FROM BECOMING SHINY.
5. ALWAYS PRESS WITH THE GRAIN.
6. REMEMBER TO PRESS WITH A LIFTING AND LOWERING MO-
TION OF THE IRON. THIS WILL PREVENT STRETCHING THE
FABRIC.
### Basic Clothing Construction

**Evaluation Sheet**

Evaluate your back pack by asking yourself the following questions, and checking the appropriate response column. After answering all the questions, total your score and allow your teacher to evaluate your back pack.

<table>
<thead>
<tr>
<th>Question</th>
<th>(5 pts)</th>
<th>(3 pts)</th>
<th>(0 pts)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Are pattern pieces cut on grain?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Is fabric suitable for pattern?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Are all seams 5/8&quot; wide, unless otherwise instructed?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Is the correct stitch length used?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Is the tension correct?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Are seams back-stitched?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Are loose threads and thread ends properly trimmed?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Are seams accurately matched?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Are curved seams nicely rounded?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Subtotals: ___ ___ ___
<table>
<thead>
<tr>
<th></th>
<th>(5 PTS)</th>
<th>(3 PTS)</th>
<th>(0 PTS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.</td>
<td>ARE FACINGS CLIPPED, TRIMMED, AND PRESSED SO THEY DO NOT SHOW ON THE RIGHT SIDE?</td>
<td>YES</td>
<td>SOMETIMES</td>
</tr>
<tr>
<td>11.</td>
<td>ARE SEAMS PRESSED BEFORE CROSSING WITH ANOTHER?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>HAVE BASTINGS, TAILORS' TACK OTHER MARKINGS BEEN REMOVED?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>IS TOPSTITCHING EVEN AND AN EQUAL DISTANCE FROM THE EDGE?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>WAS CREATIVITY USED IN INDIVIDUALIZING YOUR BACK PACK?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>IS YOUR BACK PACK NEAT IN APPEARANCE?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SUBTOTALS**

TOTAL SCORE BY STUDENT

TOTAL SCORE BY TEACHER

MAXIMUM OF 75 POINTS
BASIC CLOTHING CONSTRUCTION
PSYCHOMOTOR CHECKLIST

NAME
CLASS
DATE

YOUR TEACHER WILL EVALUATE YOU ON THE FOLLOWING PSYCHOMOTOR SKILLS. ALWAYS PERFORM THESE SKILLS AS THEY WERE DEMONSTRATED BY YOUR TEACHER.

<table>
<thead>
<tr>
<th></th>
<th>(5 PTS)</th>
<th>(3 PTS)</th>
<th>(0 PTS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>STUDENT USES SMALL EQUIPMENT PROPERLY.</td>
<td>YES</td>
<td>SOME TIMES</td>
</tr>
<tr>
<td>2</td>
<td>STUDENT APPLIES PROPER CARE PROCEDURES WHEN USING SMALL EQUIPMENT.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>STUDENT PRACTICES SAFETY PROCEDURES WHILE USING SMALL SEWING EQUIPMENT.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>STUDENT SITS UP STRAIGHT AND WELL BACK INTO CHAIR WHEN SEWING.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>STUDENT SITS DIRECTLY IN FRONT OF SEWING MACHINE NEEDLE.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>STUDENT PLACES BOTH FEET FLAT ON FLOOR.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>STUDENT RESTS HANDS LIGHTLY ON FABRIC.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SUBTOTALS
<table>
<thead>
<tr>
<th></th>
<th>(5 pts)</th>
<th>(3 pts)</th>
<th>(0 pts)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.</td>
<td><strong>Student starts and stops machine smoothly.</strong></td>
<td>☑️</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td><strong>Student controls speed of machine.</strong></td>
<td>☑️</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td><strong>Student lays out pattern according to guide sheet.</strong></td>
<td></td>
<td>☑️</td>
</tr>
<tr>
<td>11.</td>
<td><strong>Student follows proper steps when pinning a pattern.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td><strong>Student uses long, even strokes when cutting out pattern pieces.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td><strong>Student cuts notches outward in a triangular shape.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td><strong>Student follows proper procedure for chosen method of transferring pattern markings.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td><strong>Student follows pattern directions in guide sheet while sewing the back pack.</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Subtotals**

**Total score**

**Maximum of 75 points**
BASIC CLOTHING CONSTRUCTION

NAME ______________________________________
CLASS ______________________________________
DATE _____________

POST-TEST
40 POSSIBLE POINTS

CHOOSE THE CORRECT RESPONSE:

1. Notches are: (A) square, (B) circular, (C) diamond in shape.

2. Notches tell: (A) where to put buttons and buttonholes, (B) which pattern pieces are joined together, (C) the right and wrong side of the fabric.

3. To sew temporarily using the longest stitch length on the sewing machine is known as (A) machine basting, (B) hand basting, (C) machine stitching.

4. To hold two pieces of fabric together with straight pins is called (A) anchoring, (B) holding, (C) pinning.

5. Pins should always be placed (A) parallel, (B) perpendicular to the seam line.

6. The standard seam allowance is (A) 3/4 inch, (B) 5/8 inch, (C) 1/2 inch.

7. When a sewing article is completed, you want people to see the (A) right, (B) wrong side of the fabric.

8. The cut edge of the pattern piece is known as the (A) finished edge, (B) raw edge, (C) selvage edge.

9. To sew using the length of stitch best for fabric and construction task is known as (A) machine stitching, (B) machine basting, (C) hand stitching.

10. Directional stitching is (A) stitching following the teacher's directions, (B) stitching following your own directions, (C) stitching with the grain.

11. Backstitching is (A) the stitching that holds the back of your sewing article together, (B) changing direction of stitching to secure thread ends, (C) changing length of stitches to secure thread ends.

12. Pattern markings on the inside of pattern piece which mark button placement, buttonholes, pocket placement, etc. are called (A) jots, (B) darts, (C) dots.
13. The piece of fabric used to finish the raw edge of a neckline is called a (A) facing, (B) pocket, (C) zipper.

14. To cut notches out of the seam allowance to allow the curved area to lie flat when turned is (A) trimming, (B) beveling, (C) clipping.

15. To cut away part of the seam allowance is (A) trimming, (B) beveling, (C) clipping.

16. To flatten with an iron using an up and down motion is (A) ironing (B) pressing.

17. Top stitching is (A) hand sewing such as embroidery, (B) machine sewing joining the top and the bottom of a garment, (C) decorative stitching made on the right side of the fabric.

18. An invisible hand sewing stitch used for finishing hems or facings is (A) cross stitch, (B) slip stitch, (C) catch stitch.

19. To flatten with an iron using a sliding motion is (A) ironing, (B) pressing.

20. To cut the sewn seam to different widths is (A) trimming, (B) clipping, (C) beveling.
Choose the correct response:

1. Notches are: (A) square, (B) circular, (C) diamond in shape.

2. Notches tell: (A) where to put buttons and buttonholes, (B) which pattern pieces are joined together, (C) the right and wrong side of the fabric.

3. To sew temporarily using the longest stitch length on the sewing machine is known as (A) machine basting, (B) hand basting, (C) machine stitching.

4. To hold two pieces of fabric together with straight pins is called (A) anchoring, (B) holding, (C) pinning.

5. Pins should always be placed (A) parallel, (B) perpendicular to the seam line.

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A 14. To cut notches out of the seam allowance to allow the curved area to lie flat when turned is (A) trimming, (B) beveling, (C) clipping.

C 15. To cut away part of the seam allowance is (A) trimming, (B) beveling, (C) clipping.

B 16. To flatten with an iron using an up and down motion is (A) ironing (B) pressing.

C 17. Top stitching is (A) hand sewing such as embroidery, (B) machine sewing joining the top and the bottom of a garment, (C) decorative stitching made on the right side of the fabric.

B 18. An invisible hand sewing stitch used for finishing hems or facings is (A) cross stitch, (B) slip stitch, (C) catch stitch.

A 19. To flatten with an iron using a sliding motion is (A) ironing, (B) pressing.

C 20. To cut the sewn seam to different widths is (A) trimming, (B) clipping, (C) beveling.
REFERENCES

Addresses for Clothing Construction Resource Materials

CASSETTE TAPE:

"Clothing: Cutting and Sewing" - Thompson-Mitchell and Associates, 2996 Grandview Avenue North East, Atlanta, Georgia 30305. ($6.00)

FILMSTRIP KITS:

"First Aid for Sewing Machines" - Singer Company, 321 First Street, Elizabeth, New Jersey 07207.


"Sewing by Sight and Sound" - Butterick Publishing Company, P.O. Box 1945, Altoona, Pennsylvania 16603. ($89.50)

PAMPHLETS:


WORKBOOKS:

"Beginning Sewing Techniques" - Homemaking Research Laboratories, Tony, Wisconsin 54563. ($5.10 for set of 5)

"Sewing Know-Why" - Louise Spiker, 1414 Tullium Court, Indianapolis, Indiana 46229.