## Constructive sewing. 1916

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# Fuller's Constructive Sewing Series 

BOOKS-ONE-TWO-THREE-FOUR

A comprehensive course in sewing, builic on everyday practice and intended to develop constructive power, to lead students to think and do for themselves.
"It is a token of healthy and gentle characteristics when women of high thoughts and accomplishments love to sew."-Hawthorne.

# Constructive Sewing 

By Mary E. Fuller

Instructor in charge of Sewing, Household Arts Dept., Lucy Flower Technical High School for Girls, Chicago

## BOOK ONE

## Industrial Book \& Equipment Co.

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## Industrial Book \& Equipment Co

## INTRODUCTION

One thing for which the world may well be thankful is the general awakening to the fact that home keeping is not a sentimental playing with pretty things and that it should not be drudgery. People have discovered that the making and ordering of a home is a real profession and as such calls for as much and as careful training as other vocations. As a consequence, the welfare of girls is being considered today as never before, and the subject of home making, including home planning, cooking, dietetics, hygiene, sanitation, home nursing, laundering, sewing, dressmaking, textiles, millinery, ete., is taking its place in the school curriculum. The aim in giving these subjects is to make girls capable, efficient and ready to bear their share in the world's work.

Sewing as a study in our public schools has, by its results, so completely justified itself that very few persons now question its value. The extent to which it should be taught, however, is still a matter of discussion. From a narrow, limited beginning consisting of instructions in the various stitches, and in cutting and making simple garments, "sewing" has broadened in its scope so as to include not only practical training in the making of clothes but also skill in buying, taste and judgment in choosing and wearing them. It includes also a knowledge of the value of fabrics and of conditions under which they are made and sold.

In many sewing courses the individual needs of the girls receive first consideration, closely followed by work for the home and the community, the aim being to develop in the girls the feeling of responsibility for their share in the well-being and happiness of the world. School sewing in the past meant making "models"' now the girls are interested in making articles of real value. Special subjects are discussed in class, such as clothing to be worn by school children, that which is most hygienic, and the most suitable for various occasions, the best at the least expense. Connecting school and home life are lessons in making simple, useful and effective articles for the home. Color harmonies and good combinations in clothing and house furnishings may be advantageously presented.

The comparatively new subjects of textile furnishings for the home, of costume design, also of intelligent buying, of keeping accounts and of clothing budgets are important and require careful presentation. It is necessary that teachers should have considerable technical knowledge, also a definite plan of action so that the best results may be obtained with economy of time.

In the Constructive Sewing Series, written by Mary E. Fuller, all these subjects have been developed for teachers and pupils. Each teacher has her own ideas regarding methods of procedure, but if she lacks a wide experience, she would do well to profit by the experience of one who has made a deeper study of the subject. The fundamental plan of these books is home making and they will be found especially helpful in showing how school projects may be of real value and lead naturally to articles of highest importance in the home. One admirable feature is that of stating principles for certain lines of work and of following these with many suggestions which allow one a varied choice of articles to be made. The Student Records, keeping of accounts and textile lessons will be found most helpful. The drafting of patterns is well presented to show the connection between the lines of patterns and corresponding lines of the body, also the adaptation of several patterns from one, and the use of commercial patterns. Clear illustrations and directions are given for garment cutting, showing correct and economical placing of patterns on materials.

In the books for higher grades, the home and community thought is continued in lessons on bed clothing, table linen, and infant wardrobes, also suggestions regarding rugs, draperies, and other house furnishings. One is glad to find costume design given its place with lessons on millinery, dress and suit making.

Instructions are clear and concise and lead the girl to think for herself. The books are a valuable help not only in the amount of instruction they contain, but in the inspiration they give to further study.

Teachers with little training or experience in this particular line will find the books invaluable both to themselves and to their pupils through the methods and plans used in the text and those which are suggested.

Trained and experienced teachers also have need of such books; the broad selection of subjects and projects must be of service to them, and if used as text books, much valuable time may be saved from dictation and demonstration and given to other matters of importance.

Miss Fuller has condensed and systematized this big subject of "sewing" in such a manner as to help in the larger development of the girl, as she states in giving purpose of the course, "To bring to the girl ennstructive power that fortifies her in one of the most important phases of home making."

FRANCES M. WILLIAMS, (Pratt Institute and Columbia Univ.)

Director Domestic Art Dept., Indianapolis Manual Training High School.
"Every human being has duties to be performed, and therefore has need of cultivating the capacity for doing them, whether the sphere of action be the management of a household, the conduct of a profession or the government of a nation.' - Samuel Smiles.

## SUGGESTIONS TO TEACHERS

This course presents work as it should be done in every-day practice. The underlying thought in the preparation has been the constructive power which the girl should receive. The aim, therefore, is to lead to independent thinking and doing, to enable the girl to meet fully real situations.

To attain the results as intended through work as given by this book, makes necessary on the part of the teacher the exercise of proper judgment and action which will extend these results in proportion to her training and experience. The most successful returns will come from the teacher with a broad understanding of child nature, of the varying conditions to be met and the principles of pedagogy which govern the conveyance of information to the student and the guidance of the student in the constructive work.

The teacher should study carefully each project as presented so as to be thoroughly familiar with each lesson. There are, in fact, several lessons in each project. As the work advances, certain principles are repeated that technique may be secured. It will be well to follow the synopsis of the line of work as given on page 11, which synopsis clearly sets forth the principles involved and the detailed plan of the work.

The time required for each project will vary with different classes. It is well to make each project in advance of the class so that you may know the difficult points and the time it will take. If your time is short, omit some of the projects that have the same principles involved. In cases of a few students who especially like to sew and wish to do outside work, it is well to permit them to carry two projects having the same general points involved. For example, a slow class might be at work on the Protection Cloth project and a few students quicker at execution would in a few days be ahead of the majority of the class. These are the students who should be kept busy, and as time is an important factor in this work they must be encouraged to accomplish as much as possible. A project may be selected from those outlined at the end of the Protection Cloth project and worked parallel with the class lesson. In this way a home interest is created. If the student can suggest an original problem based on the class project, by all means let her develop it. In this development lies the growth of the girl and the project thus suggested and carried to completion is of the greatest value.

In the beginning of the course allied projects are suggested, but as the work progresses there are fewer mentioned, thus giving the student the chance of suggesting and originating for herself.

- Never accept poor, careless work.

Judgment must be used when requesting a student to rip. Too much ripping leads to careless work. Insist on careful work and stitchery from the start and gradually increase speed of student.

The sitting position should be erect at all times, with the feet on the floor, in order to make a good lap. The same size chair will not be suitable for each girl. Have the chairs cut down so that the small girls may sit comfortably and not find it necessary to put their feet on the rungs of other chairs.

Seat the class so that the light comes over the left shoulder.
Never permit a girl to bend over to the work. Bring the work up to the eyes. Fourteen to eighteen inches away is about the right distance.

Insist that the student always uses a thimble.
Do not sacrifice technique or construction for speed.
Explain to the class the advisability of buying good materials. There is no economy in buying "anything to learn on." Secure samples of good and poor materials and have the girls examine and discuss points of merit, etc.

Each girl should be provided with a locker or box for her work. Inspect this from time to time and insist on order and neatness.

## SEWING EQUIPMENT

No matter how carefully the student's Individual Equipment is looked after, it will be found necessary to have for emergency use the following:

Needles, No. 8.
Needles, No. 5-10.
White Thread, Nos. 40-50-60-70-80100.

Black Thread, Nos. 40-60.
Darning Needles, No. 6.
Crewel Needles, No. 7.
1 pair Shears.

1 pair Scissors.
1 pair Button Hole Scissors.
Thimbles (various sizes).
Tape Measure.
Skirt Marker.
Tracing Wheel.
Yard Stick.
Tailor's Chalk.

To assist in securing the most practical results, the School Equipment should include one or more sewing machines.

## STUDENT'S INDIVIDUAL EQUIPMENT

Each girl should have her own tools and should neither lend nor borrow.
The following tools form the usual equipment of the Sewing Outfit.
A thimble to fit the second finger of the right hand.
A pair of sharp scissors.
A tape measure.

Needles and pins suitable for the work being done.
An emery
Thread to match the material, in color and size.
A sewing apron
Keep the tools in a box or bag and always have them at hand for the sewing lesson.

Select the needle according to the size of the thread used. The size of the thread should correspond to the thread from which the material is woven.

Sizes of needles and corresponding sizes of thread-
Needle No. 5. Thread No. 40 or coarser.
Needle No. 7. Thread No. 50.
Needle No. 8. Thread Nos. 60, 70, 80.
Needle No. 9. Thread No. 90, 100.
Needle No. 10. Thread No. 120 or finer.

## NEEDLES

Needles are classified according to their use. They are:

> Sewing Needle.
> Darning Needle.
> Upholsterer's Needle. Milliner's Needle. Embroidery or Crewel Needle. Bodkin or Tape Needle. Sail Maker's Needle. Rug Needle.

The sewing needles are further classed under the three heads of "sharps," "betweens" and "ground downs."

They are sold in packages of 24 each and range in numbers from No. 1, the largest, to No. 12, the finest.

They are also sold in assorted sizes, viz.: A package of 5 to 10 will contain some of each size from No. 5 to No. 10.

The No. 5 needles are put in the center of the package with Nos. 6, 7, etc., arranged on each side.

Students should learn to use fine needles and thread.
The needles of the earliest times were made of fish bones and ivory. Needles of bronze have been found in the tombs of the Egyptians. The steel was introduced into Europe by the Moors.

The sewing needle of today is made of steel wire and is manufactured almost exclusively in England.


Fig. 1.
The needle from wire to finished article.
The wire is cut in lengths long enough for two needles. The wire is then pointed at both ends. It is next stamped and grooved in preparation for the eyes. The two eyes are now burnished. The needles are hardened by heating and plunged into oil. They are again heated and cooled slowly to prevent brittleness. The scouring process is carefully done and after washing they are dried in sawdust. They are then sorted, wrapped and labeled for market.

## THIMBLE

When the thimble was first invented it was worn on the thumb and was called the "thumb bell," from which the name thimble is derived.

The first thimbles were made of iron or brass and many of these may be seen in museums. Later the thimbles were made of pearl and very elaborately carved. The thimbles of the present are made of gold, silver, steel, aluminum and celluloid.

## SCISSORS



Fig. 2.
Scissors and Shears.
Scissors are made of steel and if over six inches long they are cailed shears.


Fig. 3.
Showing development in making Scissors and Shears.
The bar steel is first flattened and a hole punched in one end. The blade and joint are then made. Most of this work is done by hand. After the grinding of the blades and the burnishing, the blades are matched up in pairs, and the rivet fitted so that the blades work past each other easily. See illustration for different stages of making.

## SYNOPSIS OF PROJECTS IN CONSTRUCTIVE SEWING BOOK ONE

This synopsis is intended to show at a glance the important principles, steps and the detailed plan of each project. You should keep clearly in mind the points to be covered in each lesson and call the attention of the students to them.

If an operation is repeated in any project it is done to secure exactness, speed and technique.

In advance of the work on any particular project study the synopsis for this project, compare the steps or principles with those of the preceding project and emphasize the new features as well as requiring special attention to the principles which may be repeated. The synopsis follows:

## PROTECTION CLOTH

Muslin
Cotton
Warp
Woof
Selvage
Weaving
To straighten cloth
The hem
To make a knot
Basting
Hemming
Chain stitch
Outline stitch
Terms used in project
Student's Record
Questions
Home Suggestions
BAG
To decide the size and shape
To decide on material
Gingham
Chambray
Poplin
Cretonne
Running stitches
Overhanding
To put in draw strings
Terms used
Student's Record
Home suggestions

## HALF SLEEVES

To take measurements
To draft the pattern
Lawn
Linen
Cambric
French seam
Backstitching
Terms used in project
Student's Record
Questions

## COOKING CAP

To draft pattern
Lawn
Dotted Swiss
Cambric
The making of the cap
The Sewing Machine
To cut a bias
Joining a bias
Gathering
Terms used in project
Student's Record
Questions

## APRONS

Cooking Apron
Use
Calico
Percale
To draft pattern

Making of apron
Terms used in project
Questions
Student's Record

## Sewing Apron

Dimity
Cross-barred Muslin
Flaxon
To draft pattern
Placing pattern on material
Making of-
To face edges
To baste
To hem
To sew on lace
To put on a band
To make and put on ties
Terms used in project
Student's Record
Questions
Suggestions

## Work Apron

To make the draft
Feather stitching
To gather
To put on a band
To put on ties

## Apron and Work Bag

Hem
Hemming
Tuck
Basting
Overhanding
Gathering
To put on a belt

## CORSET COVER

The commercial pattern
Measurements
To make alterations
Nainsook

Batiste
Making of-
Basting
Fit
Felled seam
Laces and sewing them on
Top finish
Bottom finish
Buttons and buttonholes
Terms used in project
Student's Record
Questions

## KIMONO NIGHT DRESS

Long cloth
Cambric
Nainsook
Cotton crepe
Commercial pattern
Making ofCut Fit
French seam Finishing neck and sleeves Hem
Terms used in project
Student's Record
Home applications
Questions

## GARMENT MENDING

Hemmed patch
Overhand patch
Overcasting stitch
Stocking darning

## UNDERSKIRT

Commercial pattern
Long cloth
Cambric
Batiste
Cotton crepe
Crepe de chine
Taffeta

Gingham
Making of -
Plackets
Hemmed
Extension
Faced and extension Band
Button and buttonhole Hem
Hemming
French seam
Putting on the band

Finish of flounce, if set on the edge-
Set into hem
Put on with French seam Put on with French fell Rolled and whipped
Finish of flounce, if set up on the skirtFinished with tuck Finished with finishing braid Finished with bias tape Finished with a heading Student's Record Questions

## PROTECTION CLOTH

The Protection Cloth is used at all times to protect the materials with which you are working from the dust and dirt of the school room. It also serves as a wrapper for work when the lesson is over. It is more serviceable than a bag, as it permits the keeping of the materials in an uncrumpled condition. It can be laundered.

The Protection Cloth is made from one yard of unbleached muslin and is hemmed at both ends and marked with the owner's name or initials.

## MUSLIN

Muslin is a plain woven fabric. The term is applied to almost any of the soft white cotton fabrics. It is put to a variety of uses. It derived its name from the city of Monsul, on the Tigris River, where it was first made.
Muslin is used in both the bleached and the unbleached state. The bleached muslin is used principally for underwear, bedding and aprons.

Unbleached muslin is used where a stronger material is required and where the question of whiteness is not an important factor.

The bleached muslin is white, having been subjected to a bleaching process.

The unbleached muslin does not pass through the stages of finishing that are used for the bleached muslin. After the unbleached muslin is boiled off it is dried, pressed, made up into bolts, and then shipped to market.

## COTTON

Among all the materials which the skill of man has made into fabrics, cotton is perhaps the cheapest and the most extensively used.

Cotton is the white hairy covering of the cotton seed. It is called a surface covering to distinguish it from the bast, or stem fibers.


Fig. 4.
The Cotton Plant.
Cotton grows between 35 degrees south latitude and 45 degrees north latitude.

The countries producing the cotton of today are Brazil, Egypt, India and the United States.

India is the oldest known cottonproducing country in the world.

In China cotton has been cultivated since the earliest times as a garden plant, yet the people never turned it to account until the end of the 13th century.

Cotton studied under the microscope reminds one of a twisted tubing. Before the fiber is ripe it has the appearance of tubing, but as it ripens it twists. The twist aids in the spinning properties and gives elasticity to the fabric.

There are many varieties of the cotton plant. The two commonly known in the United States are the Sea Island Cotton and the Upland Cotton. (See Bulletin 302, U. S. Dept. of Agriculture.)


Fig. 5.
Cotton Bolls, unopen and open.

The Sea Island Cotton grows on the islands off the southern United States, and is the long-fiber cotton.

The Upland Cotton grows on the uplands of our Southern States. It is the short-fiber cotton and is commonly known as "short staple" cotton.

The species grown here are shrubs and grow from three to six feet in height. The flower resembles the hollyhock. When it first opens, it is nearly white, changing in a few days to a pink, and as it dies off becomes a purplish hue.

All the flowers do not bloom at the same time. Those at the bottom of the plant open first.

It is no uncommon sight to see a plant with the bolls bursting, the flowers in bloom, and the buds just forming.

After the cotton picking begins it is kept up continuously until the Christmas holidays.

Ginning is the first process thru which the cotton passes after picking. The process separates the seeds from the fiber.

Until 1793 this work was done by hand and it was a very slow process, but with the invention of the cotton gin by Eli Whitney the work was made easier. Formerly one man could seed only one pound in a day by hand, but now he can attend three gins and clean four thousand pounds of cotton in one day.

When the seeds have been removed the cotton is made into bales of about five hundred pounds each. In baling it is pressed into shape by an hydraulic press, then wrapped in burlap, and strapped with iron bands. It is now ready for shipment as raw cotton.

When it reaches the factory, the bale is opened and the cotton sorted.

The Breaking and Picking process opens up the cotton and thus rids it of the sand, dead leaves and other dirt. It is then formed into a lap.


Fig. 6.
Cotton Seed with fiber attached.
The lap resembles the roll of cotton batting with which you are familiar, and which is used in the making of comforters.

The Carding machine lays the fibers parallel and the cotton comes from the machine in ribbon-like bands known as Slivers.

When a fine grade of yarn is required the cotton is Combed.

The Drawing and Doubling process is often repeated several times. By this process several slivers are united and drawn together and a slight twist is given to them.

In the Slubbing process the operation is repeated three times, each time making a finer yarn and adding more twist.

The last slubbing frame makes the Roving, which is the last twist before the Spinning. It is then put on the Bobbins.

The spinning process is the final twist given to the yarn.

Two or more yarns are sometimes twisted together after the spinning, thus making the two or three-ply yarn.

If the yarn is to be dyed the bleaching may be omitted. The bleaching consists of scouring the yarn with a cold dilute bleaching powder, followed by an acid bath and thorough washing.

## WARP

The warp threads, or ends, are the threads that extend lengthwise of any material. They are the strongest threads.

## WOOF

The woof threads, which are also known as the filling, weft or picks, are the threads that are interlaced across the warp threads.

## SELVAGE

The edge formed by the woof thread at either side of the cloth is the selvage. The term is a contraction of the words "self" and "edge."


Fig. 7.
Warp threads are the vertical ones shown here. Woof threads are those running left to right. Selvage is formed by the turn of Woof threads at each side.

## WEAVING

The interlacing of the warp and woof threads is weaving. There are many ways of interlacing the threads, producing a plain or pattern weave. When the interlacing of the threads is regular, viz:-one thread over and one under, a plain weave is produced.

## TO STRAIGHTEN CLOTH

There are three ways to straighten cloth:-(1) Draw a thread and cut in the space thus formed.


Fig. 8.
Drawing a thread.
(2) Cut along a stripe of the material having the stripe woven into the cloth.


Fig. 9.
Cutting along a stripe.
(3) Tear the material.

To straighten any kind of muslin, cut the selvage at one side, tear the cloth to the opposite selvage and cut the selvage. The selvage is cut because it is woven closer than the rest of the material and should not be torn, as the resistance might cause the material to split in the opposite direction and thus spoil the material. To guard against such an accident always cut the selvage at the point to be torn, then tear across the material to the opposite side and again cut.

Examine the muslin carefully and answer the following :-

What is its weave?
Indicate the selvage.
How was the selvage formed?
Grip the cloth with the thumb and first finger of each hand about six inches apart and pull tightly along the warp threads.

Repeat the same operation on the woof threads.

What difference did you observe?
Why this difference?
Observe the raw edges.
Do they look straight?
How can you determine whether cr not they are straight?

If the torn edges are not straight, how may they be straightened?

Suppose the raw edges have a curved appearance, how could it be proven that they are straight?

Straighten both raw edges of the unbleached muslin. It is then ready for the laying of the hems.

## THE HEM

A Hem is made by folding the raw edge of the material twice in the same direction and fastening same in that position. The first fold is nar-
row, the width depending on the weave of the material and its tendency to fray. The second fold is made the required width for the finished hem. This width depends on the place to be finished and protected by the hem. It varies according to the position and material, and the taste of the maker.
For the Protection Cloth, turn down one-fourth inch on the raw edge. Crease by putting the first finger of the right hand back of the edge being creased and scratch down with the thumb nail. The edge may be pinched into position also, but the creasing with the thumb is better.

NOTE-Never draw the edge to be creased over the edge of a table or machine. It stretches the edge of the material and it is almost impossible to get rid of the fullness thus formed.

The second fold is to be of the required width for the hem.
The width of the hem must be decided upon from two points of view, viz:-utility and appearance. The first point is governed by the material. In deciding upon the width for appearance the relation of the hem to the length of the cloth must be considered.


Fig. 10.
Pinning Hem.

After the width of the hem has been decided, crease and pin, using not less than five pins; one at the center, one at each selvage and one on either side of the center, half way between the center and the selvage.
Place each pin at right angles to the folded edge as shown in the illustration.

## TO THREAD THE NEEDLE

It is better to thread the needle directly from the spool because of


Fig. 11.
Putting Needle on Thread.


Fig. 12. Passing needle along thread.
the twist in the thread which makes it liable to knot. Hold the thread near the end in the left hand. With the right hand put the needle on the thread.

Raise the thumb just enough to pass the needle along on the thread.

Observe that the needle is in the right hand ready for use. Break off about 18 inches of thread. The width of the chest serves as a good measure for proper length of thread.

## TO MAKE A KNOT

Place the thread, end downward toward the worker, over the first finger of the left hand.


Fig. 13.
First step in making knot.
Wrap the thread around the finger once and cross the end, as shown in the illustration. (Fig. 14.)


Fig. 14.
Second step in making knot.

Hold the crossed threads in position with left thumb.

Roll the end over the crossed thread with the thumb and first finger of the left hand, at the same time pull the thread slightly with the right hand, drawing the thread into the required knot.

## BASTING

Basting is temporary stitching. It is used to hold two pieces of cloth in a required position and as a guide for permanent stitching.

Even Basting is used where two pieces of cloth are to be held firmly, as in the seams of a garment that is to be fitted. The stitches and spaces are of the same length.

Uneven Basting is used where materials are to be held together and no fitting is required. It is used as a guide for permanent stitching. The stitch may be long and the space short, or the stitch short and the space long. The stitches and spaces are uneven.

Vertical or Tailor's Basting is used when two pieces of material are to be held in position one above the other, as in basting a lining or an interlining. The stitch is a slanting stitch, but it gets its name from the fact that the needle is set at a vertical position. The work is kept flat on the table for this basting.

Start a basting with a knot on the front side of the goods and fasten it by taking two stitches in the same place.

When learning to baste, take one stitch at a time, later two or three stitches may be taken before removing the needle.
Place the Protection Cloth on the table with the bulk of the material


Fig. 15.
1st (top) row-Even Basting.
2nd, 3rd, 4th rows-Uneven Basting. 5th row-Vertical or Tailor's Basting.
toward the worker, letting it fall in the lap.
Baste, with small, even basting, along the folded edge, which is held in position by pins.

## HEMMING

The Hemming Stitch is a slanting stitch.

To fasten the thread when beginning the hem, slip the needle thru the folded edge of the hem and take a small stitch on the edge. Tuck the end of the thread in under the hem.

Hold the hem over the first finger of the left hand, the folded edge of the hem and the bulk of the material toward the right hand and dropping into the lap; the second finger of the left hand is slipped over the outside of the cloth and holds the material being hemmed in position.

Take up a few threads of the muslin and pass the needle thru the folded edge of the hem, slanting the needle slightly to the left shoulder.

Next, set the needle into the muslin opposite the thread in the folded edge, take up a few threads of the muslin and pass the needle thru the folded edge, thus forming the second stitch.

Proceed across the hem, keeping the slant of the stitch and the distance between the stitches uniform.
Make the stitches as small as possible.

No knots are used.
To end the thread, take two or three very small stitches in the same place.

Cut off the thread. Never bite the thread.

To start a new thread, slip the needle thru the folded edge of the the hem and back about two stitches. With the point of the needle tuck the end of the thread in between the hem and proceed with the hemming.

## THE CHAIN AND OUTLINE STITCHES

The chain and outline stitches are used as decorative stitches in embroidery work and in marking linens and underwear.

The Protection Cloth is to be marked with the full name of the owner, so that it may be identified at a glance.

Thread a No. 5 needle with a thread of marking cotton.

## CHAIN STITCH

The chain stitch resembles the links of a chain when finished. The thread is fastened by bringing it thru from the under side of the material and taking a small stitch.

Hold the thread to the left and in position with the left thumb, as shown in the illustration. (Fig. 16.)
Insert the needle at exactly the same place where the thread comes out, and take a medium stitch, bringing the needle out over the loop thus formed.


Fig. 16.
The Chain Stitch.
To make the next stitch, hold the thread in position with the left thumb as before and insert the needle into the loop, taking up a stitch and bringing the needle out over the thread, thus making another loop.

Continue in this way, trying to keep the stitches of equal length and not too loose.

As soon as a good chain stitch can be made practice the outline stitch.

## OUTLINE STITCH

The outline stitch defines the line in embroidery or in marking household linens and underwear with letters.

Avoid the use of knots.

To fasten the thread begin back about one-half inch on the line to be marked and put in two or three small running stitches, then turn the cloth and work from you.

NOTE-In the chain stitch the work is begun at the top and worked down; in the outline stitch, the operation is away from the worker.

Insert the needle on the line and take a short stitch on the line.


Fig. 17. The Outline Stitch.

Set the needle in again, a stitch's length beyond, and on the line, keeping the thread to the same side of the needle each time. If at the start the thread is to the right side of the needle, continue so thru-out the entire line. The same is true if the thread is started on the left side of the needle.

Practice the outline stitch.
Now decide whether the chain or outline stitch is the one preferred for marking the Protection Cloth.

## MARKING THE PROTECTION CLOTH

With pencil, write the full name at one end of the Protection Cloth, two inches from the edges, making
the capital letters of the name threefourths of an inch high, and the small letters three-eighths of an inch in height.

Outline or chain stitch the name written.

## TERMS USED IN THE PROTECTION CLOTH LESSON

| unbleached | lengthwise |
| :--- | :--- |
| muslin | woof |
| cotton | weft |
| fabrics | selvage |
| Monsul | weave |
| manufactured | basting |
| material | hemming |
| bleaching | stitch |
| warp | decorative |
| thread | bolls |

## STUDENT'S RECORD

This Record should be a full memoranda of the classroom work. It should show the points gained by the pupil in working out each problem.

The problems are based on a sequence of educational principles, and the Record should be an evidence of this.

It is not the plan of this course to have models of work perfected and mounted in a book for future reference. Such a plan would be a waste of time and energy. Often it is advisable to try a new stitch before putting it on the work one is doing. These practice pieces may be mounted in the note book.

Secure samples of different grades of muslin. Study the weave, the texture and the grade of yarn used in the making. These may be mounted with the width and price, also indicate any other data that may seem advisable.

Secure a piece of material with a selvage ; mount and indicate the selvage; warp; woof.

Mount the piece showing the practice hem.

Mount the piece showing the practice outline and chain stitches.

Mount newspaper or magazine clippings referring to cotton, cotton manufacture, looms, etc.

The tests and examinations given from time to time by the teacher should be included in this Record.

## QUESTIONS AND SUGGESTIONS

Why was cotton material chosen for the Protection Cloth?

Outline the steps thru which cotton passes in its manufacture.

Give a short sketch of the history of cotton.
Describe cotton as seen under the microscope.

Name five by-products of cotton.
What is Muslin?
Define warp; woof; selvage.
Define weaving.
How may cloth be straightened?
What is a hem?
Define basting.
Where is even basting used? Uneven basting? Vertical basting?
Name the decorative stitches learned.

Explain the following terms: combing; carding; drawing; roving.

How may cotton be bleached?
What can be said about cotton as an industry in the United States?

What is the appearance of the hemming stitch on the right side?

What two things must be observed while hemming?

What is the average width and cost of unbleached muslin?

HOME APPLICATION OF THE PROTECTION CLOTH PRINCIPLES

The following articles can be made from the knowledge gained thru the experiences in the Protection Cloth project.

The plain hand towel, dish towel, glass towel, dust cloth, bread cloth, card table cover and plain runner are all finished with the plain hem and may be marked with the chain or outline stitch, according to the desire of the maker.

The material for the hand towel, dish towel and glass towel is usually crash and can be bought under their
separate names respectively. (Example: glass toweling; hand toweling.)

Cheese cloth is the material for dust cloths.

The bread cloths are usually made from an old and worn tablecloth. They are cut to size, hemmed and used to wrap fresh bread after baking.

The cover for the card table may be made of cotton Indianhead or linen. The figures are outlined or chain stitched.

The plain runner may be made of toweling or Art crash. It can be put to a variety of uses.

## BAG

To determine the size and the shape of the bag, also the amount of material-

Cut several pieces of paper to these sizes- $61 / 2^{\prime \prime} \times 18^{\prime \prime} ; 8^{\prime \prime} \times 22^{\prime \prime}$, and $51 / 2^{\prime \prime} \times 7^{\prime \prime}$. Fold these so as to secure the most pleasing proportions for a small bag.

Which one do you like best?
How long is the bag?
How wide is the bag?
Which way of the bag would the warp threads extend?
Would there be a selvage on the material? Why?

In your experiment with paper have you allowed for hems on the sides and at the top of the bag?

How wide do you think the hems on the sides should be? Why?
How wide do you think the hems at the top of the bag should be? Why?

What width ribbon or tape will you use for the strings?

How wide will you make the casing in the top hems for the strings?

After you have selected the size and shape of the bag and have decided upon the widths of hems, cut another paper making the necessary allowances for hems.

Fold the hems on the paper plan for the bag, and be sure it is the size you desire.

Indicate on the paper the casing for the strings.

The planning of this bag in paper is really the development of a pattern.

Use the pattern just developed to determine the amount of material required.

Open up the hems you have made on your paper pattern.

How wide is it?
How many pieces like this could you get out of a piece of material one yard wide?

How long is the pattern?
How much material would you buy?

NOTE-Where several bags can be cut from one width of material, the students may arrange in groups and divide so as to reduce expense and prevent waste.

## TO DETERMINE SUITABLE MATERIAL FOR THE BAG

Any firm, plain-woven material, as plain gingham, chambray, cotton poplin, light-weight cretonne or soft silk will make a serviceable bag.

Match the thread to the material you select.

No. 60 thread will be the correct size.

Use a No. 8 needle.
Match the material or secure an harmonious contrast in ribbon or tape for strings.

How many strings do you need?
How can you determine the length of the strings?

Allow for bows or lapping at the ends of the strings.
For the averago bag, one and onehalf yards of tape or ribbon are required.

## GINGHAM

Gingham is a cotton material and is always made with a plain weave.

It is a wash fabric and is woven in checks and plaid patterns. It is most commonly used for women's and children's aprons and dresses.

## CHAMBRAY

Chambray, which resembles gingham in its weave and finish, is a lightweight cotton fabric. It is made in light, soft colors, having one color in the warp and woven with a white filling, thus reducing the harshness of the warp color.

## POPLIN

Cotton Poplin is a plain-woven material, the rep effect being obtained by using a fine warp.

## CRETONNE

Cretonne is a cotton material of plain weave, or having a twill effect. The pattern is printed on one side of the material and gives an elaborate pattern effect.

It is woven in widths from twentyfive inches to thirty-six inches, and is used for couch covers, draperies and comforters.

## MAKING THE BAG

Prepare the material according to che pattern designed.

Straighten the raw edges of the material.

Which method is used to straighten the material?

Place the pattern on the cloth and cut out the bag. If the material permits, threads may be drawn for the required size and cut in the spaces thus made.

What advantage is there in being able to draw threads and cutting in the space?

Hem the long edges of the bag, making a narrow hem.

Be careful that the sitting position is erect and that the feet are on the floor while sewing.

The needle slants slightly toward the left shoulder.

The stitch is a slant stitch.
Care should be taken to have the stitches uniform and show as little as possible on the right side.

Hem the short ends of the bag, making the hem about two inches wide. See that all hems are turned to the same side.

Fasten the thread securely and neatly.

To locate the line for the stitching in the casing a marker is used. The marker will also serve as a guide for the stitching.

A basting thread will serve as the marker.
Locate with a basting the distance above the hemming in the large hems where running stitches are to be placed that will form the casings.

Basting should always be done with thread of color different from that used for stitches which are to be permanent. Why?

## RUNNING STITCH

The running stitch is a small, regular stitch passing over and under an equal amount of material. It resembles a very small basting stitch and is used for seams which have little or no strain, for tucking and gathering.

The running stitch is made by working the needle in and out of the material, taking as many stitches on
the needle as possible, then sliding them back off the needle and jogging the needle forward again. The stitches and spaces are of equal length.


Fig. 18.
The Running Stitch.
Fasten the thread at the side of the bag opposite the line of basting, by taking two or three stitches in the same place.

Begin at the right side and have the front of the bag facing you. Hold the material between the thumb and first finger of each hand; the thumb and first finger of the left hand should hold the material in position tight enough for the thumb and first finger of the right hand, with a rocking motion of the wrist, to push the needle thru the material, making the required stitch.

When you have reached the opposite side of the casing, fasten the thread securely by taking two or three stitches in the same place. Cut the thread. (Never bite the thread.)

Remove the basting thread.
Make a casing in the opposite hem exactly the same as the one just made.

Fold the material crosswise, matching the wide hems on either side.

Pin the side hems in position for overhanding. (Fig. 19.)

If you find the side hems more easily overhanded when basted than
pinned, there is no objection to their being basted instead of pinned Start


Fig. 19.
Pinning sides of bag for overhanding.
at the large hems and baste toward the bottom of the bag.

## OVERHANDING

Overhanding is a straight stitch used to join folded or selvage edges, as in patching, seams in pillow cases, piecing on a gore in underwear and sewing on lace.

Hold the seam between the thumb and first finger of the left hand and parallel to the first finger.


Fig. 20.
Overhanding.

Insert the needle at right angles to the edge of the material being overhanded and take up a few threads on each side of the seam.

To overhand the seams of the bag begin at the large hems and overhand toward the bottom of the bag.

Fasten the threads by taking two or three stitches in the same place. Insert the needle at right angles to the edge. The needle points directly toward you if the seam is held parallel to the first finger of the left hand and the finger in turn is held parallel to the chest.

Take the stitches very close together.

Do not take the stitch too deep, since it will make a ridge.

## DRAW STRINGS

Two ribbons or tapes are used for draw strings so that the bag will open and close easily.

Use a ribbon runner or a bodkin to run the drawstrings thru the casings.


Fig. 21.
Bodkin at top. Ribbon Runner at bottom.
Starting at the opening in the hem put a string thru the casing, coming out at the other opening on the same side of the bag.

Starting at the opposite side, put the other string into the casing and run around the bag. The ends of
the strings, as you note, come out on opposite sides of the bag.

The bag will close when the strings at the opposite sides are pulled.

The open ends of the strings may be finished by tying a bow knot, or by lapping the ends and turning under the raw edges and hemming them down.

| TERMS USED IN BAG LESSON |  |
| :---: | :--- |
| material | gingham |
| poplin | cretonne |
| thread | chambray |
| twill | weave |
| couch | draperies |
| basting | regular |
| stitch | casing |
| overhanding | bodkin |

## STUDENT'S RECORD

The plan for the Record book remains the same thru-out the course. Make a paper pattern of your bag one-fourth the size and mount it. Secure samples of materials suitable for bags and mount. Label samples and mark with price and width. Show illustration of running and overhand stitches by drawings or newspaper or magazine clippings.

Make a sketch showing the correct way of putting in draw strings.

## BAGS FOR THE HOME AND OTHER USES

The following bags are based on the lesson just completed:

## LAUNDRY BAG

The laundry bag may be made of unbleached muslin and a design stenciled on it. (Fig. 22.)


Fig. 22.
Bag Suggestions.


Fig. 23.
Bag Suggestions.

Another way would be to outline or chain stitch the word LAUNDRY on it with a coarse marking cotton.

Other materials that may be used are cretonne, denim and chintz.

## A BAG OF CRASH

The bag in the illustration is made of crash toweling. (Figs. 22, 23.)

To form the design, threads were removed and colored marking cotton woven or darned into the space.

The threads were also removed for
the draw strings and the groups of threads darned. This method is especially suited to more advanced students.

## FANCY SILK BAGS

Fancy silk bags may be made from silk bought by the yard or from ribbon. If the ribbon is bought the required width, the hemming on the sides is omitted.

The accompanying illustrations may serve as suggestions. (Figs. 22, 23.)

## HALF SLEEVES

Half sleeves are worn as a protection to the long sleeved dress. Many Domestic Science teachers require them worn during the cooking lesson as a part of the uniform.

They are made of white lawn, linen, cambric or muslin.

They may be plain or trimmed according to the taste of the girl.

The sleeves, or cuffs, as they are sometimes called, should be made to fit the person who is to wear them.


Fig. 24.
Half Sleeves.
Decide how far below the elbow the sleeves are to extend.

Take the measure of the outside arm from the wrist to the place below the elbow decided upon for the top of the sleeve.

Take the measurement of the elbow bent.

Take the measurement around the fist (the hand closed).

The measurements are as follows: Elbow measurement:
Hand measurement: Length:
Draw a rectangle equal to the outside arm measurement of the half sleeve, and as wide as the elbow around-the-arm measurement.


Fig. 25.
Draft for Half Sleeves Pattern.
See ABCD in illustration.
Bisect the lines $\mathbf{A B}$ and $\mathbf{C D}$.
Connect the points of bisection.
Measure to the right of point $\mathbf{F}$ a distance equal to one-half the hand measure and place a point. See point $\mathbf{P}$ in illustration.

Measure to the left of point F a distance equal to one-half the hand measure and place a point. See point 0 in illustration.

Measure down two inches from points A and B and locate points $\mathbf{G}$ and H. See illustration. (Fig. 25.)

Connect the points GO and HP.
Connect the points GEH with a curved line, as shown in illustration.
Extend lines GO and HP two inches to allow for hems and shrinkage.

Draw dash (i.e.:----) lines one inch from and parallel to the lines GO and HP.

NOTE-The seams are provided for in the extension just made.

Cut on the dash lines at the side and the curved line at the top and the dash line at the bottom of the pattern.

## LAWN

Lawn is a light-weight cotton material of plain weave.

It was originally manufactured at Laon, near Rheims, in France.

It is often printed in flower effects, or tinted in plain colors.

It is used for ladies' and children's dresses, aprons and such other articles as require a sheerer material than muslin.

Lawn is made in various grades and ranges in price from ten to thirty cents a yard.

## LINEN

Linen is a plain woven material made from the flax fiber.

It is noted for its brightness of color and its wearing qualities. It is used for household linens, sheets, pillow cases, ladies' and children's dresses and aprons. It is more expensive than cotton, but is very durable and whitens with constant washing.

## CAMBRIC

Cambric is a cotton material of plain weave with a smooth finish. The name was originally given to a fine linen fabric.

The finish is obtained by using a sizing, then dried and put thru the calendering process.

This calendering process is an ironing process, giving the material a great pressure and thus producing a gloss.

Cambric was first manufactured in Cambria, France.

It is made thirty-six inches wide and ranges in price from fourteen to thirty cents per yard.

The length of the half sleeve determines the amount of material required. To the length of the material add four inches to allow for sewing and the straightening of the material.


Fig. 26.
Placing Pattern on Material.
Place the pattern on the material with the line EF of the pattern on the length of the goods. If the material is not wide enough to cut both cuffs at once by folding the material, the pattern may be placed as shown in the illustration. (Fig. 26.)
Join the edges HP and GO with small, even bastings. Use a No. 8 needle and a No. 60 thread.

## FRENCH SEAM

A French seam is used when the material is fine and a neat finish is required.

It is a seam made within a seam. The first seam is made on the right side of the garment and the running stitch is used. The seam is then trimmed to within one-eighth of an inch, or closer if the material permits.

Turn the garment to the wrong side and crease the seam along the line of the stitching.

Baste the seam the required width, using small, even basting.

Make the second stitching far enough below the creased edge to include the raw edge on the inside of the seam. There must not be ravelings on the right side of the garment. Sometimes by holding the seam to the light the raw edge can be easily seen and the depth of the seam can be more easily determined.

## BACKSTITCHING

Backstitching is used in place of machine stitching. It is used where strength is required in the stitch. It is rarely used when one has a machine, because it is a slow, painstaking operation. It is used on the cuffs, as the operation here is short and there will be enough practice to acquaint the student with the stitch.

The stitch gets its name from the fact that the needle is always set back into the last stitch made.

Fasten the thread at one end, holding the cuff in such a position that the bulk of the material is to the right and downward toward the lap.

Insert the needle back of the thread into the last stitch and take up the material on the needle, bringing the needle out the length of a stitch in advance of the thread, as shown in the illustration. (Fig. 27.)


Fig. 27.
Backstitching.

Repeat the stitch until the seam is finished.

Remove the basting.
Fasten all the threads securely.
Backstitch the other cuff.
The sleeves may be finished with a one-half inch hem.

## TERMS USED IN THE HALF SLEEVE LESSON

| sleeves | lawn |
| :--- | :--- |
| cambric | muslin |
| cuffs | elbow |
| wrist | measurement |
| rectangle | extension |
| curved | material |
| woven | flax |
| fiber | expensive |
| finish | sizing |
| pressure | gloss |
| garment | ravelings |
| stitch | operation |

## STUDENT'S RECORD

Let one-fourth or one-eighth of an inch represent an inch and draw the cuff draft in the Record Book. That is called drawing to a scale.

Secure samples of materials discussed in the lesson and mount. The width and price are valuable information.

## SUGGESTIONS

Plain cuffs, such as have been considered in this lesson, are used by cooking classes and hospital nurses. A girl handy with the needle and located in a city or town where her talent could be used, might make cuffs and establish for herself a small income.

## QUESTIONS

What do you understand by a pattern?

Has the Half-sleeve pattern helped in making the idea of a pattern clearer to you?

Why is it necessary to make extensions to the pattern after it is drafted?

What decided your choice of material for the sleeves?

Compare Lawn and Linen.
Compare Lawn and Cambric.
What do you understand by length of the goods?

Define a French seam.
Define backstitching.
How does backstitching compare with machine stitching on the wrong side?

When would backstitching be used?

How many materials have you learned of thus far?

Did you do your own buying of material for Half Sleeves?

If it requires sixteen inches of a yard-wide material for a pair of cuffs, what part of a yard would you ask for at the store?

What would it cost to supply a class of twenty girls with material at fourteen cents per yard, if a pair of sleeves can be cut from sixteen inches of cloth?

Is there any gain by buying in one piece?

What would have been the gain in the above problem?

## COOKING CAP

The Cap is worn as a protection to the hair from dust while working, and to hold in place stray hairs while one is engaged in cooking.


Fig. 28.
Cooking Cap.
The cap may be made of white lawn, dotted swiss or cambric to match the sleeves.

To make the pattern, secure a piece of paper 27 inches wide and 30 inches long.

Place the paper on the desk with the 30 -inch dimension extending from left to right, and the 27 -inch dimension extending from front to back. Keep paper in this position while drawing.

Two inches from the left hand edge draw a rectangle 21 inches long by $51 / 2$ inches wide. Name the rectchineangle ABCD. (Fig. 29.)
Two inches up from point $\mathbf{C}$ and two inches down from point $\mathbf{D}$ place the points $\mathbf{E}$ and $\mathbf{F}$.

Draw EA and FB.
The figure AEFB is the front of the cap.

Copy $(\times)$ on the figure AEFB as $(X)$ as they appear in the $(X)$ illustration.
One and one-half inches to the right of the front of the cap, draw a 20 -inch square. Name the square ABCD.

Bisect the sides of the square.
Name the points of bisection E, F, G, H.

Draw HF and EG. (Fig. 29.)
Four and one-half inches to the right and left of $\mathbf{F}$ place points.

Name these points $\mathbf{X}$ and $\mathbf{Y}$.
Draw a semi-circle starting at point $\mathbf{E}$ and pass thru point $\mathbf{H}$ and G. Connect points $\mathbf{X}$ and $\mathbf{E}$, and points $\mathbf{Y}$ and $\mathbf{G}$ with curved lines.

The figure, XEHGY is the top or back of the cap.

Copy the $(\times)$ on the front of the $(X)$ cap as they are $(X)$ shown in the illustration. (Fig. 29.)
These crosses indicate the length of material.

The seams are included in this draft. Cut out the pattern of the cap.

## RESUMÉ

How wide is the material that has been selected for the cap?

What is the price per yard?
How many inches long must the material be for the cap?
What part of a yard is that amount?


Fig. 29.
Draft for Cooking Cap Pattern.

How wide must the material be for the cap?

Determine the length and the width of the material.

This is very important, as the pattern must be placed on the length of the material according to the marks.

All patterns have marks indicating the length, and to insure a perfect
hanging garment these marks must be observed.

Pin the cap pattern to the material and be sure that the ( x )
(x)
(x)
are on the length of the material.
Cut one back section and two front sections.

## LAWN

Lawn is a light-weight cotton material of plain weave. It was orig. inally manufactured at Laon, near Rheims, in France. It is often printed in flower effects, or tinted in plain colors. It is used for ladies' and children's dresses, aprons and such other articles which require a sheerer material than muslin.

## DOTTED SWISS

Swiss is a cotton material sheerer in texture than lawn and harder to the touch. It was originally made in Switzerland, hence its name. There are many varieties of swiss. The curtain swiss and the dotted swiss being the most common. The dotted swiss is used for waists and children's dresses. It is more expensive than other materials of the same cotton texture. This is due to the expense of making the material rather than the value of the cotton used in its manufacture.

## CAMBRIC

Cambric is a cotton material of plain weave with a smooth finish. The name was originally given to a fine linen fabric.

The finish is obtained by using a sizing, then dried and put thru the calendering process.

This calendering process is an ironing process, giving the material a great pressure and thus producing a gloss.

Cambric was first manufactured in Cambria, France.

It is thirty-six inches wide and ranges in price from fourteen to thirty cents.

## MAKING THE COOKING CAP

The cap may be sewed entirely by hand or with a combination of hand and machine.

We advise the combination of hand and machine, as time is an important factor, as well as technique, and the average person would not backstitch a long seam that could as well be sewed on the machine.

As this course aims to be practical as well as educational, directions for both hand and machine sewing are given.

Machine stitching, backstitching or the combination stitch may be used around the front of the cap on the edges AEFB.
To backstitch the front of the cap, see lesson on backstitching (Half Sleeves).

The combination stitch is made by taking two or three running stitches and a backstitch. For directions on the running stitch, see Bag lesson, page 25.

If the machine is used, some knowledge and practice must be had before attempting the stitching.

## SEWING MACHINE

Sit up well in your chair directly in front of the machine. The common mistake made by the beginner is tilting forward on the edge of the chair and having the chair too far back from the machine so that the arms rest on the edge of the machine to support the body. Sit erect and do not rest on the machine. Put both feet on the treadle. (See the guide book for your machine and learn the names of the parts of the machine.)

Unthread the machine and remove the shuttle.
Raise the presser foot and loosen the screw in the hand wheel that connects the machine with the wheels. The wheels will then revolve without working the other parts of the machine.

Press the feet forward and back with a rocking motion.

Practice this until you have a smooth, even motion and can start or stop at will, without using the hand on the hand-wheel.

When you are able to run the machine smoothly, tighten the screw in the hand-wheel.

Place two thicknesses of material (white muslin is good practice cloth) between the feed and the presser foot.

Lower the presser foot.
Stitch slowly and carefully without thread, guiding the cloth.

Do not pull the cloth from behind. The machine will feed fast enough and pulling bends and breaks the needle.

Continue this practice until you can stitch a straight line. The holes made by the needle will guide you.

Thread the machine. (See machine guide book.)
Read the instructions in the machine guide book regarding the tension and the regulation of the stitch for the machine that you are using. Practice stitching, regulating stitch and tension.

Place the two thicknesses of the Cap material under the presser foot and lower the foot to hold the material in place.

Stitch around the front of the Cap on the edges AEFB keeping a uniform seam of about one-fourth inch.

Cut off the corners $\mathbf{E}$ and $\mathbf{F}$ outside of the stitching to remove the bulk. If seam is too wide or raveled, trim slightly, being careful not to cut too close to the stitching.


Fig. 30.
Corners to be removed.
Turn the front of the Cap right side out and crease along the line of stitching.

Face the bottom edge of the top of the cap. (Edge XFY.)

## TO CUT A BIAS

A bias is a diagonal cut across the warp and woof threads. There are two kinds of biases, the garment bias also called the tailor's bias, and the true bias. To cut a true bias, fold over the end of the material so that the warp threads are parallel to the woof threads and cut along the slanting fold.
A bias facing may be cut the required width in several ways. Measure from the edge of the diagonal cut at right angles to the edge the required width for the facing and mark in some convenient way, either with pins, or creasing, or a pencil. The pencil marking is not the best way. It soils the material and is not easily removed.


Fig. 31.
Measure or gauge.

A measure or gauge may be made and used in place of the tape measure.

The gauge may be made from an old post card. Measure down on a straight edge the width for the facing and mark. At the mark, cut into the card parallel to the top edge and then make an oblique cut to the straight one.
Another way to secure a true bias is by using the bias cutting gauge that is supplied with the attachments of many sewing machines.

This attachment is placed on the end of the smaller point of the scissors and by slipping the diagonal edge of the material into the gauge a true bias strip the required width may be made.

## JOINING BIAS STRIPS

Place the right sides of the material facing each other and the selvages together as shown in Fig. 33.


Fig. 32.
Bias Strips.


Fig. 33. Joining Bias Strips.

If both pieces have selvages there is no danger of there being a mistake, but if the bias should have raw edges it will be necessary to determine the warp threads and place the length of the material to the length.
It may be necessary at some time to join a bias on the cross of the goods. While this is done, it is not the best way and on such an occasion the cross of the material must be joined to the cross. Never join the straight of the goods to the cross, as the straight edge is firmer and the cross stretches, thus a puckering would be the result.

Cut a bias three-fourths of an inch wide and stitch across the edge XFY, by machine or hand. If you stitch it by hand use the combination stitch.

Crease the facing along the stitching to the wrong side of the cap and turn in the edge and baste as a hem. Hem, using the hemming stitch.

## GATHERING

Gathering is the small running stitch used to draw a portion of material into a smaller space.

Two rows of stitches are used for


Fig. 34.
this as shown in Fig. 34. The stitches are very small and uniform in size. The same amount of cloth is taken up on the needle as it passes over. To make the running stitch, hold the work in the left hand between the thumb and first finger, and with a wrist motion of the right hand push the needle forward making small stitches and passing the needle over spaces of equal length. The needle is not removed during the process, but when filled the material is pushed along on the thread.

Mark the center of the edge to be gathered with a thread or a small notch. (Fig. 35.) When the gathering is finished, remove the needle and make a knot at the end of the thread.


Fig. 35.
Put in the second row of gathers half way between the first row and the raw edge.

Place a pin after the last stitch at right angles to the raw edge. Draw up the gathering threads and wrap them around the pin in the form of a figure eight. (Fig. 36.)

With the left hand take hold of the gathers at the top edge and with


Fig. 36.
the right hand draw the material downward with a zig-zag motion. This adjusts the gathers without stroking.

Remove the pin and spread the gathers to fit the front of the cap.

Pin the center of the cap to the center of the upper edge of the front.

Spread the gathers to fit the upper edge of the front and pin into place. (Fig. 37.)

All gathers are to be evenly adjusted.


Fig. 37.
Baste and then stitch either by hand or machine. In hand sewing, use the combination stitch.


Fig. 38.
Cap Suggestions.

Turn down the edge of the opposite side of the front and bring over the gathers to the line of stitching just made. Baste.

Hem the edge to gathers. The heming stitch must not show thru to the right side.

If desired, the edge may be stitched by machine and the edges BFEA may be finished in a like manner. This gives a neat finish to the front of the cap.

In most cases, this cap fits the head perfectly, but should it be a little large, a small plait may be stitched in each side.

## TERMS USED IN COOKING CAP LESSON

| lawn | sizing |
| :--- | :--- |
| swiss | combination |
| dimension | backstitch |
| rectangle | treadle |
| bisect | machine |
| draft | shuttle |
| section | presser foot |
| varieties | tension |
| texture | feed |
| manufacture | bias |
| gauge | selvage |

## STUDENT'S RECORD

Make a cap draft to a one-eighth inch scale.

Mount samples of materials suitable for caps giving width and price.

Secure illustrations from advertisements and fashion magazines of up-to-date caps for various uses and make a record of the materials and trimmings you would use in their construction.

Illustrate the cutting and joining of a bias with striped material.

## QUESTIONS AND SUGGESTIONS

Name the different kinds of caps with which you are familiar.

What materials do you think are suitable for a cooking or sweeping cap?

Would you trim a cooking or a sweeping cap? Why?

Would you use colored materials for a nurse's cap? Why?

What good reasons can you give for cutting the cap on the length of the material as indicated by the $\mathbf{X}$ 's on the pattern?

What would be the result if the girl placed the X's on the cross of the goods instead of the length as indicated?

What points have you found that all sewing machines have in common?

Name the parts of any machine.

## APRONS

COOKING APRON AND SEWING APRON

The word apron is derived from the French word "napedon" meaning a large cloth for covering. The word for table cloth "nappe" comes from the same root.

The apron is usually used to cover the front of a person while at work, thus protecting the clothes from injury. It is worn by both men and women and may be made from mate-


Fig. 39.
Cooking Uniform.
rials best suited to the line of work of the wearer.

What kind of an apron would a blacksmith wear? A butcher? A house maid? A shoemaker? A schoolgirl? A cook? A seamstress?

A cooking apron may be made from Berkley cambric, a fine grade of bleached muslin, calico or percale.

Cambric. (See lesson on Half Sleeves.)

Muslin. (See lesson on Protection Cloth.)

## CALICO

Calico is a plain cotton material upon which the pattern is printed. The first calico was made in Calicut, India, from where it derives its name. Upon its introduction into England it became very popular, so much so that the weavers and spinners of other fabrics asked Parliament to impose a duty on all printed cotton goods. Later there was a law prohibiting the wearing of calico under the penalty of a heavy fine, and it was not until 1831 that that law was repealed. The introduction of calico did much to promote cleanliness among people and at the same time it put bright colors at their disposal.

## PERCALE

Percale is a grade of cambric ornamented with printed patterns. It contains more dressing than the ordinary muslins and is finished without a gloss. The cheap grade of percale is no better than calico. The better grade is often finished in plain


Fig. 40.
Draft for Apron Pattern.
white and is used for men's shirting, women's waists, children's wash dresses and aprons.

## TO TAKE MEASUREMENTS FOR APRON DRAFT

Measure from the shoulder down the required length of the Apron. Secure a piece of paper as long as the measurement you have taken for the length of the Apron and eighteen inches wide.

Three inches down from the upper left hand corner place a point $\mathbf{A}$. (Fig. 40.)

Two and one-half inches to the right of the upper left hand corner, place a point B.

Connect A and B with a curved line.

Measure the width of the chest three inchas below the neck across to the arm's eye.

Lay off one-half this measurement on the draft measuring to the right of $\mathbf{A}$ to $\mathbf{C}$.

Take the measurement from the arm's eye to the waist line.
Lay off the distance from $\mathbf{C}$ to $\mathbf{D}$ equal to this measurement.

Draw CD.
Draw DE. The point $\mathbf{E}$ is the lower left hand corner of the paper. The line CF may be curved to suit the girl. BF is the shoulder line and may be made any desired width.

Note that the Apron pattern is 18 inches wide at the bottom, and will require material one yard wide. If the material is not one yard wide the sides of the Apron will have to be pieced and this must be considered in the purchasing of material. Cut pattern on lines ABFCDEG.

Measure the pattern you have just made and add an allowance for the hem. You will require twice this amount of cloth. Why?

Straighten the material at both ends.

Fold in half lengthwise of the goods.

Fold in half again; this time on the cross of the goods.

See that the selvages are together.
Place the pattern with the edge AG (Fig. 40) on the folded edge of the goods.

The edge BF will be on the folded edge of the goods also.

If the material you are using is less than a yard wide, it will require piecing. Join a selvage to a selvage and match the pattern or stripes of the goods. The joining may be done by machine or by hand using the combination stitch.

The arm hole DFD may be faced or finished with a finishing braid. For bias facing refer to the lesson on bias facings (Cooking Cap project).

Bias lawn in contrasting colors and various widths can be bought by the bolt and may be used instead of biases of the same material. If the bias lawn is used it may be seamed to the front side of the Apron and then stitched flat and will serve as a trimming. This method requires machine stitching and it is quite necessary that the stitching be done on the edge.

If the facing is to be a hand process, stitch the facing with the seam to the wrong side of the Apron, then crease along the line of sewing and hem down the opposite edge.

Face the other arm hole.

Locate the center of the back of the Apron and tear the opening down the back.

Face the neck of the Apron.
Stitch a one-inch hem on each side of the back opening.
Beginning at the under arm D make a French seam on each side of the Apron. (For French seam, see Half-sleeves.)

Fasten all seams securely and neatly.

To fasten machine stitching you may draw both threads to the same side of the stitching and tie or you may begin the stitching about threefourths of an inch or an inch below the starting point and then stitch to the starting place, then turn the work and retrace the stitching, continuing along the rest of the seam.

Cut all ends of threads and leave the work in a neat condition.

Cut off any unevenness at the bottom and make the required hem.

## TERMS USED IN COOKING APRON LESSON

| calico | faced |
| :--- | :--- |
| percale | bias |
| weavers | contrasting |
| spinners | trimming |
| gloss | crease |
| measurements | locate |
| draft | French seam |
| shoulder | securely |
| allowance | printed |
| selvage | fabrics |

## QUESTIONS

What do you understand by a draft?

What do you understand by a pattern?

What is the average width and price of calico?


Fig. 41.
Apron Suggestions.

In what respects are calico and percale alike?

What is the difference between a facing and a hem?

What reason would you give for not hemming the neck of this apron?

What points are in the favor of a white apron for a cooking apron?

## STUDENT'S RECORD

Secure samples of materials suitable for aprons. Mount with width and price.

Draft a cooking apron to a onefourth or a one-eighth inch scale.

Estimate the cost of your apron. Keep a record of the number of hours it required to make the apron.

Compare your apron with a "bought" apron. Has your apron any advantages? What are they?

Write a short account entitled "How I made a Cooking Apron."

Secure pictures of full length aprons from fashion books and magazines and decide upon the best kind for a Cooking Apron.

Mount illustrations showing what you consider a good and a poor type of cooking apron:

## SEWING APRONS

The Sewing Apron may be made from plain or printed lawn, dimity, cross-barred muslin, dotted swiss or flaxon.

## DIMITY

Dimity is more sheer than lawn and its characteristic is the tiny
raised cord extending lengthwise of the goods. As a rule, dimity is pure white, but it is sometimes dyed in the soft tints.
Dimity is considered one of the best of the many kinds of materials. It is used for women's gowns, fancy aprons and children's dainty clothes.


Fig. 42.
Draft for Sewing Apron rattern.

## CROSS-BARRED MUSLIN

Cross-barred muslin resembles dimity in its texture, having the raised cord extending both lengthwise and crosswise of the fabric. This crossing at times is regular, thus forming squares; again it is found with the crossings in groups so as to form an irregular marking. Often the bar is formed in the weave without the cord. The material is popular as an apron material.

## FLAXON

Flaxon is a comparatively new material. It is finished to resemble a sheer linen. It is also made in the bars and stripes, and unless you are familiar with dimity and cross-barred muslin you might mistake flaxon for either of them. It is made 36 inches wide and ranges in price from fifteen cents to forty cents per yard.

## DRAFT FOR SEWING APRON

Secure a paper 36 inches long by 32 inches wide.

Place the paper before you on the desk with the short edge for the top. Mark it TOP.

Measure down $31 / 2$ inches from the upper right hand corner, then $81 / 2$ inches to the left. Here place a point A. (Fig. 42.)

From point A draw a vertical line 24 inches long and parallel to the edge on the right hand side of the paper. Mark line AB.

After measuring from the upper right hand corner 18 inches to the left and $1 / 2$ inch down, place point $\mathbf{C}$.

Draw CA making a slightly curved line.

Measure up from point B 83/4 inches. Locate point D.

Measure to the left of D 15 inches and place point $\mathbf{E}$.

Draw ED at right angles at D.
Draw a curved line from C passing thru points $\mathbf{E}$ and $\mathbf{B}$.

Locate a point $\mathbf{F}$ on the line DE $81 / 2$ inches to the left of $D$.

Locate a point G $11 / 4$ inches above point $\mathbf{F}$.

Draw GD with a slight downward curve.

Extend GD to the right 7 inches. Extend B to the right 7 inches.
Draw HI parallel to DB.
Bisect the line AC.
Draw a line from $\mathbf{K}$ thru $\mathbf{G}$ cutting the line CEBI.
Place three $\mathbf{X}$ 's on your draft parallel to lines AD and HI. Remember what these X's indicate. It is very important that you mark them on the pattern and observe them when you are cutting your Apron.

Locate a point L 4 inches to the right of the upper left hand corner of your paper. (Fig. 42.)

Draw a vertical line 26 inches long parallel to the left side of the paper and at right angles to point L. Name the line LIM.

From point $\mathbf{M}$ and at right angles to it draw a 4 inch line to the left. The rectangle LMNO is the pattern for the ties of the apron.
Locate a point P $21 / 2$ inches to the right of point $\mathbf{L}$.

Draw a vertical line $81 / 2$ inches long to the left of the line LMM and at right angles to the point P. Name the line PR.

From point R and at right angles to it draw a $2 \frac{1}{2}$ inch line to the left. This gives the line RS.

The rectangle LPRS is the pattern for the band of the apron.

Number the parts of the pattern as they are numbered in the illus-
tration. They will be more easily referred to by number when they are cut apart.
Mark two X's as shown on No. 1 and No. 2 of the pattern, and two other X's parallel with the line KG.
The sections of the pattern are as follows:

No. 1-One tie.
No. 2-One-half band.
No. 3-Side.
No. 4-Front.
No. 5-Ruffle.
No. 6-Pocket.
Cut out section 4 of Pocket pattern.
Place the edge $\mathbf{A D}$ on the right hand edge of the paper and trace section 4. Name section 6 TUVW. (Fig. 42.)
From point $\mathbf{V}$ measure up 8 inches on the line UV and locate point $\mathbf{X}$. Draw the line $\mathbf{X Y}$ parallel to the line VW.

The part TUXY is cut off and the section YXVW or No. 6 is the pocket section.

Cut each section apart and write your name on the reverse side so that you may know your pattern.

## PLACING THE PATTERN ON MATERIAL

One and one-half yards of material are required to make the Sewing Apron.
Place sections 6, 4 and 5 on the length and fold of the goods. The three X 's indicate the length and fold of the cloth.

Section one is cut with the two X's on the length of the goods. Cut two ties.

Section two is one-half the band.


Fig. 43.
Diagram for placing pattern.

Cut the band with the two X 's on the length of the goods.
Study the diagram and place pattern as indicated.

## MAKING THE SEWING APRON

Face the top of the pocket using a one-half inch facing, No. 70 thread and a No. 8 needle. For facing, see Cooking Cap project.
Carefully gather the top of the ruffle. For gathering, see Cooking Cap project.

Adjust the gathers carefully and baste to the bottom of the front of the Apron, making the seam on the right side.

Place the front side of the pocket facing the front side of the ruffle and the bottom edge of the ruffle even with the bottom of the Apron and baste to the two pieces already basted.

NOTE-Three pieces are basted together viz.: the front section, the ruffle and the pocket. When the pocket is placed upon the front of the Apron the seam will be in the inside of the pocket.

Stitch by hand or machine the seam just basted.
Trim off the seam to within about one-fourth of an inch of the stitching. Remove the bastings.

Turn the pocket up on the front of the Apron and baste in position.

Baste the side KG of section 3 to each side of the front, making the seam on the front side of the Apron. (For instruction on French seam, see Half-sleeve project.)

Stitch the seams either by hand or machine.

Remove the basting and trim off the seam as closely as possible without cutting the stitching.

Turn and crease to the wrong side and make the French seam.

Trim off any irregularities around the bottom and either face or hem the bottom edge.

NOTE-If a lace edge is to be used as a finish, make a narrow hem. The hemming is to be hand work. If a facing is to be used make it onehalf inch wide and do the hemming by hand.

## PUTTING ON THE BAND

Put in two rows of gathers across the top of the Apron.

Adjust the gathers so that the Apron does not draw across the abdomen, but hangs with enough looseness to hang in straight lines.

Mark the center of the Apron.
Mark the center of the belt.
Place the center of the belt to the center of the Apron and baste the belt to the Apron making the seam on the wrong side of the Apron.

Stitch the belt to the Apron.
Remove the basting thread and trim off the seam if it is too deep.

Turn down the band to the wrong side of the Apron and turn under one-fourth of an inch, then baste the folded edge of the Apron on the line of stitching.

NOTE-The band on the back of the Apron must not extend below the edge of the band on the right side. If such a mistake is made, the stitching of the band on the back of the Apron would be below the front edge of the band and would appear on the gathers making a very poor piece of work.

Turn in the raw edges at each end of the band and hem the band down by hand.

Finish the ties with a one-eighth inch hem on the long sides and a two inch hem on the end.

Fold the end of the tie to fit the end of the band and insert into the open ends of the band. Fasten in place by very small backstitches.

## SEWING ON LACE

The Apron may be trimmed with lace if you wish.
Measure the distance around the bottom of the Apron and the ends of the ties. To this add about eighteen inches for fulling.

Divide the garment to be trimmed into sections of halves, fourths, or eighths and mark the divisions with pins.

Divide the trimming in a like manner and pin to the garment at the points of division.

Hold the lace toward you while sewing. This will permit the fulling in enough for the Apron.


Fig. 44.
Sewing on lace.
In some laces a draw string will be found and the lace can be fulled before starting to sew.

Overhand the lace to the Apron. (For the overhanding lesson, see Bag project.)

## TERMS USED IN SEWING APRON PROJECT

| dimity | required |
| :--- | :--- |
| flaxon | diagram |
| draft | section |
| locate | finish |
| indicate | band |
| front | belt |
| ruffle | fasten |
| pocket | measure |
| reverse | lace |

## STUDENT'S RECORD

Put a draft of the Apron, drawn to scale, in your Record book, with a sample of the material and the trimming you used.

Secure pictures of aprons for different occasions and put them in your book with an estimate of the amount of material required for each. Give the width and cost of the material per yard and the average cost of each apron.

## QUESTIONS AND SUGGESTIONS

Name three styles of aprons that are named from their use.
Name five kinds of material from which aprons may be made.

What lessons are taught in the sewing apron project?

What has been gained by drafting the apron pattern?

What is understood by warp and woof threads?
What threads extend lengthwise of woven cloth?

Which threads are the stronger, the warp or the woof threads?

Why are bands and belts cut lengthwise of the cloth?

What do you consider the difficult steps in making this apron?

Of what value has the making of this apron been to you?

## WORK APRON

(An extra project.)

This apron may be made of dimity, figured lawn, cross-barred muslin or flaxon. Use No. 70 thread and No. 8 needle.

To determine the amount of material needed, measure the length you wish the apron. You will need twice this measurement. It is well to get the material one yard wide as it cuts to a better advantage.

Secure a piece of paper the length


Fig. 45.
Section of Draft for work apron patternthe back.
you wish the Apron and 23 inches wide.
Fold the paper on the length. The width will now be $111 / 2$ inches wide.
Measure down 5 inches on the folded edge of the paper and locate a point A. (Fig. 45.)

Measure down $21 / 2$ inches on the open edge and locate point $\mathbf{B}$.

Connect AB with a downward curve.

Locate a point C $61 / 2$ inches to the left of point A.

Locate point D 15 inches below point B.

Locate point E 3 inches below D.
Place point $\mathbf{F}$ at the lower right hand corner of the paper.

Place point G $71 / 2$ inches to the left of point F.

Beginning at $\mathbf{C}$ draw a slightly curved line to $\mathbf{D}$ to $\mathbf{E}$ to $\mathbf{G}$ to $\mathbf{F}$.

Cut out pattern along the lines AC DEGF.

Divide the pattern into two equal parts by cutting on line AF.

One section will serve as the back of the Apron and the other for the front or pocket section.

Place three X's along the line AF to indicate the fold and the length of the goods.

On the pocket section locate a point K $21 / 2$ inches to the left of $\mathbf{A}$.

Draw a line $81 / 2$ inches long parallel to the line AF.

Name the line KN.
From point C locate a point L 11/2 inches to the right of $\mathbf{C}$.
From L draw a line 9 inches long and parallel to CD.


Fig. 46.
Section of Draft for work apron patternthe front.

Name the line LM.
Connect the lines LM and KN with a curved line.

Cut on the lines KNML. (Fig. 46.)
Cut a rectangle 3 inches wide and 18 inches long for the band; and one 4 inches wide and 26 inches long for the ties.

Cut out the material according to the pattern, being careful to place the edge AF on the length and fold of the cloth.

The edge KNML forms the opening for the pockets.

Hem with a very narrow hem or face the edge KNML.

Why is it necessary to make the hem narrow?

Thread a No. 7 needle with a good marking cotton of about No. 25 or two strands of a six-ply cotton. You may use a colored cotton if you are sure it will wash.
To thread the crewel needle pinch the end of the cotton between the first finger and thumb of the left hand. Hold the needle in the right hand and press the eye of the needle over the end of the thread between the fingers of the left hand. The thread will enter the eye of the needle easily. (Fig. 47.)


Fig. 47.
Threading Crewel Needle.
Beginning at point $\mathbf{L}$ featherstitch half way around the pocket.

Beginning at point $\mathbf{K}$ featherstitch half way around the pocket.

## FEATHERSTITCHING

The featherstitch is a decorative stitch used on aprons, dresses, underwear, infant's clothes and household linens.
Before starting the featherstitch we will review the chain stitch we learned in the Protection Cloth project. See page 21.


Fig. 48.
The Featherstitch.
The thread is fastened by bringing it thru from the underside of the material and taking a small stitch.

Hold the thread to the left and in position with the left thumb.
Insert the needle at exactly the same place where the thread comes out, and take a medium stitch bringing the needle out over the loop thus formed.

To make the next stitch hold the thread in position with the left thumb as before and insert the needle into the loop, taking up a stitch and bringing the needle out over the thread, thus making another loop.

Continue in this way keeping the stitches of equal length and not too loose.

After you have tried the chain stitch hold the thread in position with the left thumb as before, but instead of inserting the needle into the loop, insert it at the right about $1 / 8$ inch away and bring the needle out over the thread as before. Continue making the stitch to the right in the form of an open chain until you can get a fairly good stitch; then take the open chain to the left
and when you can do that well, begin to alternate the stitch making first a stitch to the right and then to the left. (Fig. 48.)

This is called the single feather or briar stitch.

To make the double featherstitch, take two stitches to the right then two to the left. (Fig. 48.)

The individuality of the stitch depends on the worker. With a little practice, it can be made very artistic.
Place the front side of the pocket to the wrong side of the back of the Apron.

Baste around the edge of the Apron.

Stitch the two pieces together.
Remove the basting. If the seam is too wide trim slightly. Turn the pocket right side out.

Crease on the line of stitching just made, baste along the crease and across the top to hold the back of the Apron and the pocket in place.

Featherstitch the outside edge of the Apron.

Hold the Apron up to you and decide whether or not a little fullness would add to the gracefulness of the hang of the Apron.


Fig. 49.
Fastening thread.


Fig. 50.
Apron Suggestions.

If you decide that you need the fullness, put in two rows of gathering stitches.

Draw up both threads at the same time and fasten at the side of the Apron on a pin in the form of a figure eight. (Fig. 49.)

The gathers can be adjusted by pinching them at the top with the left hand, while with the right hand they can be moved along on the gathering thread.

Remove the pin and adjust the gathers to the required fullness.

Locate the center of the Apron and the center of the belt.

Pin the center of the belt to the center of the Apron, laying the raw edge of the belt even with the raw edge of the Apron, and putting the belt to the wrong side of the Apron.

Baste the band to the belt.

Stitch and remove the bastings. Trim off the ravelings of the seam.

Turn down the band to the wrong side of the Apron and turn under one-fourth of an inch. Baste the folded edge to the Apron on the line of stitching.

NOTE-The band on the back of the Apron must not extend below the edge of the band on the right side. Be sure that the belt is creased perfectly straight.
Turn in the raw edges at each end of the band and hem the band in place.

Finish the ties with a one-eighth inch hem on the long sides and a two inch hem on the ends.

Plait the end of the tie to fit the end of the band and insert into the open ends of the band and fasten securely with small backstitches.

## APRON AND WORK BAG COMBINED

One yard of gingham, figured lawn, dimity or cross-barred muslin, will make this Apron.

Straighten the material at both ends.

NOTE-If the material is gingham, it can be straightened by cutting on the stripe; if it is lawn or dimity draw a thread and cut on the space thus formed; if it is cross-barred muslin, cut on one of the bars.


Fig. 51.
Straightening material by drawing thread.
Cut off 3 inches of the material on the length.

This strip, one yard long and three inches wide is to be used as a belt.

Make a one-fourth inch hem on the long sides of the material. Use No. 70 thread and a No. 8 needle.

Make a one and three-eighth inch hem on one short end of the material.

Twenty-two inches from the end of the hem on the short end of the material, crease the goods on the right side across the width. Baste along the creased edge.


Fig. 52.
Basting.
Measure back one and threeeighths inches and baste.
NOTE-This forms a tuck one and three-eighths inches on the right side of the Apron.

Stitch the tuck just basted.
If you are making the entire Apron by hand use the combination stitch of two running stitches and a backstitch.

Keep the tuck straight.
Remove the bastings.
NOTE-Bastings are temporary stitches and should always be removed as soon as the permanent stitches are placed.

Turn up the end with the one and three-eighths inch hem to the wrong side of the Apron and even with the tuck just made.
Pin the hemmed sides together thus forming a bag or pocket eleven inches deep and as wide as the hemmed material.

Overhand the two hemmed edges together, beginning at the stitching of the tuck and the hemmed edge of the one and three-eighths inch hem.


Fig. 53.
Overhanding.
Overhanding is the method of sewing together two selvage edges or two hemmed or two folder edges. The stitch is a straight stitch and requires great care to make it correctly. It must not be taken too deep and both edges must be caught at the same time.

The needle is inserted at right angles to the edge being sewed. (See the lesson on overhanding in the Bag project.)

Fasten all ends of thread securely and cut off closely.

Use a No. 50 thread for gathering the raw edge of the material.

Put in two rows of gathering oneeighth inch apart.

Adjust the gathers by drawing up tight and fasten on a pin in the form of a figure eight. This does away with the necessity of stroking.

Remove the pin and spread the gathers to the fullness you desire.

This is determined by holding the Apron up to you and pushing the gathers to either side of the front until the Apron hangs gracefully.
Mark the center of the Apron and the belt.
Pin the center of the belt to the center of the Apron, placing the raw edge of the belt even with the raw edge just gathered.
Fasten the gathers and baste Apron to the belt.
Stitch the belt to the Apron and remove the bastings.
Crease one-fourth inch to the wrong side on the opposite side of the belt and baste even with the stitching just made holding the belt to the Apron.
NOTE-Special attention must be paid to the way a belt is put on. It must not draw at any place; it must be perfectly flat and not extend below the stitching on the Apron at any point.

Turn in the ends of the belt and overhand.
Hem by hand or stitch the belt by machine. Remove all bastings.

Any fastening with which you are familiar may be used. Tapes or ribbon may be sewed to the ends of the belt and used as ties.
Two yards of tape or ribbon will be required for the bag strings.

Divide the tape or ribbon into two equal parts and with a ribbon runner, carry the tape thru the hem and the tuck, coming out at the same opening as you entered.
Lap the ends of the tape, turning in the raw edges and hem down.

Starting at the opposite side, put in the other tape in a like manner

## CORSET COVER

## 1 HE COMMERCIAL PATTERN

A pattern may be secured by drafting to measurements, free cutting, modeling or molding, also a commercial pattern may be purchased.
Any and all of these ways are good, providing each is understood by the person using it.
The drafted pattern may be made by using the tape line only, or a drafting system may be learned thru which an accurate pattern may be made.

The same result is attained by those who are familiar with the human figure and the grain of materials and have experience in designing. By draping directly to the figure and cutting away the unnecessary material excellent results are obtained. This is called modeling or molding and is in use among many dressmakers. It is no uncommon


Fig. 54.
Corset Cover Suggestion.
thing to hear a dressmaker say, " I never use a pattern"; meaning of course she uses the modeling method which is considered the highest type of pattern construction.

In free cutting the dressmaker has a knowledge, thru practice, of the neck, shoulder and armhole curves and can by measuring the customer, cut a lining without a pattern.

Some dressmakers use cardhoard forms having these curves. With these she can get the curve she desires after she has the customer's measurements.


Fig. 55.
Corset Cover Suggestion.
The Commercial Pattern is designed and drafted by experts to standard measures, for the use of the woman who is not familiar with drafting, so that she may make her own clothes. They are of much value and in great demand by the woman
who knows how to sew, as well as by many who earn a living by dressmaking.

The more one knows about the figure, modeling, drafting and free cutting, the more easily will the commercial pattern be understood.

The commercial pattern is a time and labor-saving device.

The preceding projects have given you an insight into simple drafting and free cutting. You have been taught to make and use a simple pattern.

Every girl should know how to buy, alter and use a commercial pattern.

Many good, reliable patterns are on the market. These are bought by size or age.

Children's and small sizes are usually bought by age, while the others are bought by either bust, waist or hip measure.

## MEASUREMENTS

To determine the bust measure pass the tape measure over the fullest part of the bust well up under the arms, meeting between the shoulders at the back. Slip the fingers of the hand holding the tape measure underneath it to insure a loose measurement.

The waist measure is taken by pulling the tape measure tightly around the smallest part of the waist.

The hip measure is taken loosely over the fullest part of the hips. This is usually about six inches below the waist line.

When buying a commercial pattern, take the required measurement carefully.


Fig. 56.
Positions of tape in taking measurements.
Until you are familiar with commercial patterns, so that you may decide for yourself, which make is best suited to your figure, it is well to buy a different make of pattern for each new garment.

You will find that some manufacturers of patterns are more definite in their directions and supply charts and diagrams to help in the understanding of the markings.

Each pattern maker has his own system of markings and these must be understood before cutting the material.

As a rule only one-half of the pattern is given and there are certain pieces that must be cut on the double of the cloth, or on the fold of the cloth so that the part that it represents will be in one piece in the garment.

Some patterns allow for seams while others do not, and it is because of this that the pattern should be studied carefully and understood before cutting the cloth.

The placing of the pattern on the warp threads is very important and each pattern has its directions for doing this. Read these directions
carefully and follow them, for upon this the hang of the garment depends.

After you have studied the parts of the pattern, its markings and the placing of it on the material, it must be tried and tested to see if any alterations are necessary.

There are two ways of making alterations. One is to pin the paper pattern together and slip it on; if it is too long thru the body of the pattern, pinch a tuck into the pattern across the back, or the front, or below the hip and pin the tuck in place. This shortens the pattern in the easiest way possible. If the pattern is too short, slit it across the back or front or below the hip as the case may be and place an extension of paper in the opening and pin into place.


Fig. 57.
Altering Patterns.
Undergarments usually require very little alteration and we will take up a fuller discussion of alteration of patterns later.

## CORSET COVER PATTERN

Select a good Corset Cover pattern according to your bust measure. Avoid the one piece pattern for the first corset cover.

Read the directions carefully. The amount of material you will need will be in the directions of the pattern you select.

The suitable materials for corset covers are long cloth, berkley cambric, nainsook and batiste.

## NAINSOOK

Nainsook is a muslin used for underwear and infants' clothes. It is distinguished from lawn, batiste and cambric in having a softer finish and not having as firm a construction.

## BATISTE

Batiste was named after Jean Baptiste, a linen weaver of France. Originally the material was woven of fine linen threads for women's summer dresses. Now the name is applied to several grades of cotton goods which are put to a variety of uses.

## DIRECTIONS

Place all pieces of the pattern on the material and cut the Corset Cover according to directions given with the pattern. Watch for the marks indicating the length of the material and be sure to place the pattern according to the markings.

Baste the under arm and shoulder seams.

Baste the hems on the front edges.
Slip on the Corset Cover and pin at top and bottom of the front and fit where necessary.


Fig. 58.
Placing Pattern on material.
Very little fitting is required on underwear, if the pattern is the correct size, but one needs to see that the armhole is comfortable and that the top is high or low enough according to the wearer's desire. If the armhole is too tight, slash it around the edge and cut it out after it is taken off. By following this plan you have a better chance to keep the correct curve of the armhole. Fit the Corset Cover loosely, as it will shrink in both the length and width when laundered.

## FELLED SEAM

A felled seam, or flat fell, as it is sometimes called, is stitched as a


Fig. 59.
Felled Seam being made and finished.
plain seam on the wrong side of the garment first, then one side of the seam is trimmed off to within $1 / 8$ inch of the stitching and the opposite side of the seam is turned in and hemmed down over the raw edge making a flat seam.

The felled seam is used on garments that come in contact with the skin. They should all turn the same way and care should be taken that no tucks or rough places appear on the right side of the garment. As a rule all felled seams on underwear turn toward the front. They are stronger, made so, because all bodily


Fig. 60.
Shoulder and Side Seams are Felled Seams. Armhole is "faced".
movements are usually forward and the pull on the seam is with the bodily motion.

## FINISHING THE TOP

There are many methods by which the top of a Corset Cover may be finished. The following list is given so that you may be familiar with
other ways than the one that is required in this project:

A narrow hem.
A narrow bias facing.
A rolled hem.
Embroidery beading with muslin edge used as facing.
Face the neck and armholes with a narrow bias facing. The first stitching may be done by machine, but the hemming of the facing is to be done by hand.

Hem the front hems.

## LACES FOR UNDERWEAR

Your taste is shown in your selection of laces and finishings for underwear. Linen laces are the best for wear. Cotton laces may wear well but are not pretty after being laundered.

The machine made imitation of Cluny and Torchon laces give good service and are very desirable for underwear.

In selecting both lace and material you should take into consideration the wear and the laundering the garment will be put thru. Simple garments are always in good taste and are easily laundered. If you desire a heavy garment for hard wear, muslin or long cloth will give good service. For garments not requiring hard wear Berkley cambric and cotton crepe will answer the purpose, but for light, thin and dainty garments nainsook is used. This wears well but requires great care in laundering.

In selecting laces for these materials, the fineness of the fabric must be considered, i.e., machine made Torchon and Cluny laces, Hamburg and Swiss embroideries are best adapted for the long cloth, cambric
and crepe materials, while the Valenciennes, the hand made Torchons and the batiste embroideries are best for finer materials.

FINISHING THE BOTTOM
There are many ways of finishing the waistline of a Corset Cover. The following list will make you familiar with other methods than the one required in this project.

A corset cover may be finished with-

A band.
A beading.
A hem.
A casing.
A peplum.
Gather the lower part of the Corset Cover allowing for whatever blousing you may wish. Adjust the gathers to fit the waist loosely. Cut off the extra material $3 / 4$ inches below the gathering.

Cut a belt $21 / 2$ inches wide on the length of the material and as long as the gathered portion of the Corset Cover allowing an extra inch that will permit of a $1 / 2$-inch turn-in at each end.

Stitch the belt to the gathers putting the seam on the wrong side of the garment.


Fig. 61.
Overhanding.

Trim off the seam and turn down the opposite side $1 / 4$ inch and fold over the seam, bringing the folded edge to the stitching just made, holding the band to the gathers. Baste.

The band must be straight.
Overhand the turned-in-ends and hem the band of the Corset Cover. No stitches should show above the band on the Corset Cover. (Fig. 61.)

## BUTTONS AND BUTTONHOLES

The study of buttons is very interesting. In early times, they were used as ornaments only and it was not until the reign of Queen Elizabeth that it was found by making a slit in the garment the button could be used as a fastener.

So popular did they become that at the close of the 17 th century the button industry was established thru-out Europe, the center of the industry being at Birmingham, England.

Buttons are made from a variety of materials, all of which are of value according to the use to which they are placed.

Buttons are made of wood, metal, mother-of-pearl, glass, agate, horn, bone, rubber and paper.

## MAKING THE BUTTONHOLES

The buttonhole is cut on the thread of the material.

The size of the buttonhole is determined by the size of the button.

Use a pair of sharp scissors, or a pair of buttonhole scissors.

Measure the diameter of the button and cut several buttonholes, on a double piece of material for practice. Try the button in the buttonhole and see if the hole is the correct size.


Fig. 62.
Buttonhole Scissors showing adjusting feature for size of cut.

Mark with a pin or a basting thread the place for the buttonholes. You will need at least four in Corset Cover.


Fig. 63.
Marking the Button Hole positions with pins.

Decide whether you are going to have vertical or horizontal buttonholes.

The vertical buttonhole is barred at both ends.


Fig. 64.
Places for Button Holes may be measured between bastings.

The horizontal buttonhole is barred at one end.

When the line of construction is vertical and no great stress is to be made on the buttonhole, then make the vertical buttonhole.

When the line of construction is horizontal or there is great stress or wear on the buttonhole, then make the buttonhole horizontal.

Cut and work one buttonhole at a time.

If common scissors are used to cut the buttonhole, the desired length must be marked. This may be done with a pin or basting thread.
Insert the scissors at the point marked nearest the edge of the garment and cut on the thread of the material.

Hold the garment when starting the buttonhole so that the edge is to the palm of the left hand and the bulk of the garment may fall into the lap.
Place the cut buttonhole over the fore finger of the left hand, holding the fingers parallel to the chest; then turn the fingers'so that the tips point to the chest. This is the cor-


Fig. 65. Making a Buttonhole.
rect position for making the buttonhole. The needle is inserted from right to left and the thread is drawn out to the right with a jerk motion which tightens up the thread and prevents it knotting. Upon the evenness of the pull or the jerk depends the stitch of the buttonhole.

Barring or stranding the buttonhole is the next step.


Fig. 66.

While the hand is in the horizontal position insert the needle at the lower right hand corner. Start with a few very small stitches to fasten the thread. No knots are used.

Carry the thread to the opposite end of the buttonhole, insert the needle taking up a stitch and bringing the needle out on the opposite side of the buttonhole. (Fig. 66.)
Insert the needle at the upper right hand corner and take up a stitch bringing the needle out at the starting point.

Now turn the fingers toward the chest as directed and the hand is in position for the next step in buttonhole making, Overcasting.

The overcasting stitch is a loose slanting stitch put over the raw edge of materials to prevent it from raveling.

Take four stitches on the lower part of the buttonhole as deep as the bar and four stitches on the opposite side, bringing the needle out at the lower right hand corner of the buttonhole.

The overcasting holds the two pieces of material together and prevents it raveling.

With the hand parallel to the chest and the fingers bent toward the chest, insert the needle at the lower corner, not too deep, but far enough to cover the stranding and the overcasting.

Before pulling the needle thru, bring the thread that is in the eye of the needle from right to left around and under the point of the needle. (Fig. 67.)

Pull the needle and thread directly to the right thus forming the purl, or twist, that belongs on the top of the slit of the buttonhole.


Fig. 67.
Continue along the side nearest the left hand, keeping the stitches the same depth and close together. Do not crowd the stitches but leave room for the purl.

When you have reached the end of the slit, spread the stitches forming a fan until you are directly opposite the last stitch on the other side.


$$
\text { Fig. } 68 .
$$

Keep turning the work so that the buttonhole is in the same position on the finger as when you started.
When you have reached the end of the slit on the other side of the buttonhole, the thread will be on the inside edge of the buttonhole. Put the needle down to the wrong side of the work and bring the needle out at the starting place.

Make two or three stitches across the end of the buttonhole from stitch to stitch.

Beginning at the right of the bar, slip the needle under the stitches just made.

Hold the thread down with the left thumb and bring the needle out over the thread, thus forming a loop stitch. Pull the needle toward you with each stitch. (Fig. 67.)

Sometimes in taking up the threads of the bar a tiny stitch is made in the material. This holds the bar in place.

Four or five stitches are all that are necessary to complete the bar. Fasten the thread securely on the back of the garment.

## SEWING ON BUTTONS

Lap the right side of the Corset Cover over the left side so that the center of the right side coincides with the center of the left.

Put pins thru the buttonholes to locate the places for the buttons on the left side of the Corset Cover.

Thread a needle with a thread twenty numbers coarser than that with which you are sewing. Take a stitch thru the point marked by the pin. Instead of using a knot make a buttonhole stitch at this point and remove the pin.
Bring the needle thru the hole of the button. Place a pin across the iop of the button and take the stitches across the pin so that the thread will not be too tight and the buttonhole side will slip into place easily. (Fig. 69.)


Fig. 69.

If the buttons have two holes, sew them on so that the threads follow the warp threads of the material. If the buttons have four holes, sew them on so that the threads cross at ight angles to the warp and woof threads of the material, i.e., have one set of threads follow the warp threads and one set follow the woof.

Remove the pin, bring the needle out from under the button and wind the thread around under the button three or four times, thus making a sort of shank for the button.

Fasten the thread on the wrong side of the garment directly under the button.

## TERMS USED IN CORSET COVER PROJECT

measurements modeling molding draft commercial
pattern designed standard bust charts diagram horizontal overcasting
alterations undergarments nainsook batiste armhole arm's eye felled seam gathers buttonhole scissors vertical construction parallel

## STUDENT'S RECORD

Secure samples of five different materials suitable for underwear. This may be done by exchanging samples with the other girls of the class.

Examine the samples and record the following: width, price, quality, fibre and durability as compared with some other material.

Make a sketch of your Corset Cover.

Report on the following:
The fit of the Corset Cover.
The neatness of the finish.
Are the buttonholes well or poorly made?
NOTE-Buttonholes require practice and it is a good plan to make several until you can get an even stitch and are able to keep them all the same size before putting in your garments.

Mount your practice piece in your Record Book.
Is the machine and hand sewing the best that you can do?

Make out a statement for the materials used in your Corset Cover.

Could you buy a ready made one for the same amount?
Record the results of your coin parison.

## QUESTIONS

What is a pattern?
What is a draft?
What do you understand by modeling?

Tell three ways of securing a pattern.

Which one do you think is in common use?

What is the important point to remember when placing a commercial pattern?

Give three points in favor of commercial patterns.
Outline the things you have learned in making the Corset Cover.

What lessons in the Corset Cover project were review lessons?

Do you believe in review lessons? Why?

## KIMONA NIGHT DRESS

The Kimono Night Dress is very popular for its simplicity and the ease with which it can be made. The


Fig. 70.
Kimono Night Dress Suggestion.
attractiveness and beauty of underwear depends upon the fineness of the material and the carefulness of the work, rather than an overloading of laces and embroideries.
The night dress may be made of long cloth, cambric, nainsook, batiste or cotton crepe. Cotton crepe is very popular and makes a very serviceable night dress.

Cotton crepe is a crinkly material, the crinkly effect being secured in the weaving or by treatment with acids after weaving. The material does not require ironing, and for this reason is much used for waists, kimonos, and underwear by tourists during the summer. If the crinkly effect is secured during the weaving process it will remain during the laundering process, but if the crinkly
effect is produced by the use of acids after the weaving it will gradually straighten out in time in the laundering.


Fig. 71.
Another Sügestion.
Select a plain Kimono Night Dress pattern according to your bust measure. Read very carefully the directions that are on the pattern envelope. Examine the chart or diagram, if the pattern includes one, that you may clearly understand all the markings, joinings and notches indicated on the pattern. Be sure that you know the markings indicating the length of the goods as this is important.

NOTE-Refer to discussion of Commercial Patterns in Corset Cover project.

Test your pattern for its length. Measure it across the shoulders and across the chest so that you are sure as to its size.

If it is too long after the hem has been allowed take out the extra length by pinning a tuck in the pat-


Fig. 72.
Position of Pattern on Material.
tern below the hip line. Refer to Alterations in Corset Cover project. Do not try a "Square neck" for the first night dress.

Place the pattern on the material according to directions and cut. Mark the notches, showing the joinings with a colored thread or marking chalk. Cutting the notches often prevents the finishing of the seam without trimming the seam off the entire length to the depth of the notch. It is well to form the habit of marking the notches in some other manner than cutting. Pencil is used by some, but the lead rubs off on the material, leaving it in a soiled condition. There is no excuse for getting your sewing soiled. Always keep the material as new and clean as possible.

Baste the seams on the right side of the garment and slip it on to see if any alterations are needed. Undergarments should be fitted very loosely.

Stitch the seam and trim off as close as possible without injuring the strength of the seam. Turn to the wrong side and crease on the stitching.

Baste the French seam d.eep enough to take in the raw edge. You will now see the necessity of close and careful trimming of the first seam.

Stitch the seam and remove the bastings.

The neck and sleeves may be finished in one of the following ways:
(1) Faced with a narrow facing and a narrow linen lace or a lace and beading combined, overhanded on.
(2) The edges scalloped.
(3) Embroidery beading, using the muslin edge for facing, and a narrow lace edging, overhanded on.
(4) A crochet yoke set on and hemmed down on the lower edge. Then cut away the extra material under the yoke and turn in the raw edge and hem down. (Refer to Finishings in Corset Cover project.)

Slip on the Night Dress and mark the required length.

Baste along the lower edge, thus keeping the marking of the length.

Make a gauge for the width you wish the hem. (Refer to the Cooking Cap project for gauge.)

Cut the turned-up part of the hem even and turn in one-fourth inch and baste.

Hem the bottom of the Night Dress.

## TERMS USED IN KIMONA NIGHT DRESS PROJECT

| kimono | embroidery |
| :--- | :--- |
| crepe | crochet |
| launder | edging |
| acids | lace |
| directions | Cluny |
| diagram | Torchon |
| notches | Hamburg |
| alterations | Swiss <br> Valenciennes <br> crinkly |

## STUDENT'S RECORD

Secure such samples of hand made lace as you can and compare with machine made imitations. Record the price of each.

Secure samples of embroideries and insertions showing good and poor selections.

Illustrate two good ways of finishing the Kimono Night Dress.

Collect pictures from fashion sheets and current magazines show-
ing good and poor use of decoration; the simply made and the over trimmed underwear.

## HOME APPLICATION OF THE KIMONO NIGHT DRESS PRINCIPLES

There are other garments that can be made at home using the Kimono Night.Dress principles. With a little thought and experimenting you can use the same pattern for a Kimono; and Kimono Cover-All-Apron or the Kimono Dressing Sacque.

For the Kimono, open the garment down the front after the under arm seams are sewed. Face the neck, front and sleeves with a bias facing two or two and one-half inches wide.

For the Cover-all-A pron allow an extra inch in each side of the back and open the garment down the back, making a hem or facing it as the size may require. Face the neck and sleeves with a narrow bias facing, on the right or wrong side. If faced on the right side, the stitching is done by machine as the facing forms a trimming and may be done in contrasting colors if you wish.

The Kimono Sacque is cut to come a little below the hips and is opened down the front like the kimono and may be finished in the same manner or trimmed with lace. By looking up the garments in the fashion magazines, a variety of styles and finishes will be suggested to you. If the use of these projects make you independent and original enough to be able to design a garment and make it in a creditable way, then you may feel that your sewing course is fulfilling the plan for which it was designed.


Fig. 73.


Fig. 74.

## QUESTIONS

Which garment have you enjoyed making the most?

Did you find the Kimono Night Dress difficult?

What points did you find hard to understand?

Where did you look for additional information about lace and embroideries?

Are there any lace industries located in the United States?

Locate the cotton raising districts of the world.
What kind of cotton thread would be used for lace making?

What do you understand by a Commercial Pattern?

How does a commercial pattern differ from any other pattern?

Name five cotton materials suitable for underwear and give the wearing qualities of each.
How do you distinguish cambric from long cloth?

## MENDING GARMENTS

A patch is the replacing of a piece of material on a worn place or over a hole in a garment or household cloth.

Always do the repairing before laundering, otherwise the holes become more stretched and the weak threads more weakened.

If the garment is faded or shrunk, the new material that is to be used for patching must be treated so as to match as nearly as possible.

To fade the material, wet the patch and expose to the sun.

The Hemmed Patch is the strongest and the one most commonly used.


Fig. 75.
The Hemmed Patch.
The Overhanded Patch is used on very thin materials where the thickness of the hemmed patch would be objectionable and where a pattern can be more easily matched.

Darning is the replacing of the parts worn out in a garment or the
reinforcing of the worn parts by the interlacing of the threads.

The darning material should be carefully chosen and should match in color and texture as nearly as possible the material to be mended.

There is no process in sewing more important than darning, and none which offers such an excellent chance to show skill.

Frequently a fine garment meets with an accident and the torn part can only be repaired by artistic darning.

It requires practice to become skilled, yet every girl should give enough time and attention to this line of sewing to become sufficiently expert.

## THE HEMMED PATCH

It is well to practice the patching on a small piece of material before attempting it on the garment.


Fig. 76.
Small Patch basted in place.

For this purpose a piece of striped or checked gingham six inches square and a smaller piece four inches square will serve. Fine needles and thread will give betier results.

For muslin and ginghams use No. 90 thread and No. 9 needles.

The worn part of the garment is cut away and the hole to be patched is cut square or rectangular. Cut a small hole at the center of the larger piece of material to represent


Fig. 77.
Showing diagonal cuts at corners.


Fig, 78,
the worn hole, then cut along the sides of the hole, making it square. Place the patch on the wrong side with the warp threads of the smaller piece parallel. The stripes, checks. or pattern must be matched.

Baste the smaller piece in place.
Cut the corners on the large piece diagonally as shown in Fig. 77.

The diagonal cuts are of the same length, ending on the warp and woof threads as shown by the dotted lines in the illustration. (Fig. 78.)

Turn in the raw edges and crease on a thread and baste to the larger piece.

Hem down the creased edges.
Turn in all raw edges on the wrong side and crease.

Open up the creases at the corners. The creases cross at right angles forming a small square at each cor-


Fig. 79.
near. (Fig. 79.) Cut diagonally across each square at the corners of the patch. This does away with the extra bulk at the corners that would otherwise be folded under. See illustrations. (Fig. 80.)


Fig. 80.

The pattern must match on the wrong side as well as on the right. Baste and hem down the creased edges.
Remove all bastings and press.


Fig. 81.
Basting and Hemming creased edges.

## THE OVERHANDED PATCH

Use a small piece of material in making this patch before trying it on a garment.

Secure a six and a four-inch square of checked, striped or pattern material.

Use a No. 9 needle and No. 90 thread. Prepare the hole as in the hemmed patch, cutting away the worn and weak edges and making a square or rectangular hole.

Make the diagonal cuts at each of the four corners.

Fold the edges of the patch to the wrong side of the patch making a square that will fit and match the hole prepared in the larger piece of material. The warp threads of the patch follow the warp threads of the garment, and the woof threads of the patch follow the woof threads of the garment.

Cut off the corners as directed in the Hemmed Patch project to avoid the bulk of the material caused by the overlapping at the corners.

Place the patch on the right side of the garment, or article being mended, with the creased edge of one side of the patch even with the creased edge of the hole.

Pin at each corner so as to prevent the patch slipping. (Fig. 82.)

Begin at the corner and overhand one side of the patch to the garment. Do not take the stitch too deep.


Fig. 82.
Overhanding a patch.
Remove the pins and crease out the seam with the forefinger and the thumb nail.

Pin the next side of the patch to the garment and overhand together, being careful to keep the pattern matched.

Repeat on the four sides of the patch, creasing out the seam of each with the thumb nail.
Overcast the raw edges of each side of the seam.

## OVERCASTING STITCH

The Overcasting Stitch is a loose. slanting stitch, put over the raw edges to prevent raveling.


Fig. 83.
Showing edges overcasted.
The depth of the stitch depends on the material; a loose, soft material requires a deeper stitch than a firm material.

The distance between the stitches usually equals the depth of the stitch.

When overcasting a bias seam, begin at the broad end of the piece and sew toward the narrow part. This prevents the material raveling.


Fig. 84.
Overcasting bias seam.
Press the seams of the patch with a warm iron.

In making this patch, care must be taken not to draw at the corners while sewing and that the sewing is well done at the corners, also that the stitch is not too deep.

It is important that the warp threads of the patch extend in the same direction as the warp threads of the garment. If this is not observed, the patch will pucker when laundered.

## DARNING

Stocking darning is used to mend a hole in materials of a stockinet weave.


Fig. 85.
Darning.
It is done by inserting new threads to replace the warp threads and then weaving in the woof threads, one over and one under the warp threads.

Provide yourself with a stocking to be darned, a medium sized darning needle (No. 6) and darning cotton or wool to match the stocking in color and texture.

The heel and toe of a stocking should be darned over a curved surface so that the darn may keep the form of the stocking. Darning the foot of the stocking on the right side insures a smoother surface next the foot.

A form over which to darn stockings may be bought at the notion counter of any dry goods store.

The darning can also be done successfully by stretching the stocking over the left hand.

Trim off the raveled, loose and frayed edges around the hole.

## TO THREAD A DARNING NEEDLE



Fig. 86.
Threading a darning needle.
To thread the darning needle, pinch the end of the darning cotton between the thumb and first finger of the left hand and press the eye of


Fig. 87.
the needle over the end of the thread. With a little pressure downward over the thread, it will enter the eye of the needle.


Fig. 88.
The shape of the darning depends on the general shape of the hole. (Figs. 87, 88, 89.) The reinforcement of the weak, worn part around the sole is called running.


Fig. 89.

Begin as far to the right and above the hole as is necessary to put in the threads corresponding to the warp threads. Do not pull the thread too tight, but leave a loop at each end to allow for the pulling up into the cloth and for shrinkage in washing. (Fig. 88.)

When the hole is reached, pass the needle over the edge and under the opposite edge and when returning pass over the edge and under the opposite edge. This keeps an even thickness around the edge of the
hole and does away with a ridge which would be formed if the over and under method is not observed. Keep the stitches close together.

When the hole is covered and the weakened part around the hole is reinforced, put in the woof threads. When the hole is reached, the darning or weaving process is used. The needle is passed over one and under one as shown in the illustration.

Keep the stitches as close together as possible.

## THE UNDERSKIRT

Select a commercial pattern for an underskirt according to your waist measure.


Fig. 90.
Underskirt Suggestion.
A three, four or five gored pattern with a flounce makes a very nice skirt. The five gored skirt is more easily fitted than the three gored.

The pattern you select will give you full directions as to the amount of material you will require for that particular pattern.

Read the directions on the pattern and be sure you understand all the markings referred to in the directions.

The materials suitable for underskirts are long cloth, cambric, batiste, cotton crepe, gingham, crepe de chine and taffeta.

## GINGHAM

Gingham is a plain woven material; the warp and woof threads are the same size and twist. It is woven in stripes and checks, the pattern being produced by the arrangement of the warp and woof threads. It was orig. inally manufactured at Guingamp, France, from where it received its name. It is used principally for women's and children's washable dresses and aprons. At first it was a coarse material of two colors, but now it can be had in the finest tissues, often made into artistic patterns of


Fig. 91. Skirt Suggestion.
the daintiest colors. When gingham is taken from the loom, it has a very unfinished appearance. The cloth is then inspected and when an imperfection is found it is discarded for the time and is finished later as "seconds."" The loose ends and the threads are removed by the use of a gas flame.

The soap and water bath brightens the colors; it is then starched and ironed. The ironing process is done with large rollers and is called calendering. The cloth is then rolled on a board by an automatic machine that registers the number of yards on each board. The bolts are then pressed and the paper bands are pasted on. Now the gingham is ready for shipment in the form that it is shown you over the counter.

## TAFFETA AND CREPE DE CHINE

Taffeta and Crepe de chine are silk fabrics that have come into favor recently for underwear. The crepe de chine is used for corset covers, night dresses and skirts. It is not a durable material but looks sheer and pretty for a short time. It requires great care in laundering and cannot be scalded.

Taffeta is used for underskirts and suits. History records that the term has been applied to various silks of the same weave for about six hundred years. Sometimes the material was thin and soft, while at other periods it was heavy and thick. The taffeta of the present day is the glossy stiff material. It is not the best wearing material one could find for skirts because of its affinity for
the salts of different metals used in the weighing of the silk during the dying process. Much of the weight of the silk that is lost in the boiling off is replaced and considerable weight is added.

Taffeta may be bought in a variety of colors.

Make your first skirt of chambray or gingham. You may make a taffeta skirt later as a home project.

The average width of gingham and chambray is 30 inches to 36 inches. The pattern will tell you the amount of material you will need.


Fig. 92.
Placing skirt pattern on the material.
Place the pattern on the material according to the markings. Watch for the markings that indicate the length of the goods.

Cut the skirt and mark the notches that indicate the joinings. Use thread or chalk to mark the notches. (Refer to instruction on cutting notches, Kimono Night Dress project.)

Join the gores according to the notches, beginning at the top of the
skirt; baste down. Baste the seams on the right side. Leave an opening 13 inches long for a placket.

Slip on and fit.
The lines of the skirt must follow the lines of the figure.

If the skirt is too large at the waist and gathers are not desired, take up by making each seam a little deeper, or by taking darts in the side gores. If darts are taken, they must end at the hip line. If the skirt fits all right at the hips and is not loose enough at the waist, let out each seam to make the waist line large enough.

## OUTLINE FOR UNDERSKIRT

## Cut

Fit
Stitch seams
Plackets

1. Hemmed
2. Extension.
3. Faced and Extension.

## Band

Button and button-hole
Hem

## Flounce

1. Finishing braid or a bias.
2. Tuck.

It is well to be able to think through a project and see the possible steps from the beginning to the end. The above outline is the result of thinking through the project and putting the steps in logical order. At a glance you can see the number of different methods of finishing that can be used.

As you progress with the sewing course, your constructive power will be increased.

Stitch the skirt by machine making French seams.

## PLACKETS

The placket is an opening in the upper part of a petticoat or skirt.

There are three types of plackets that may be used on an underskirt: The hemmed placket, used on flannel skirts for children and on children's wash dresses; the extension placket which is used on nearly all kinds of underwear, and the faced and extension placket which may be used on underwear and wash dresses.

The hemmed placket (Fig. 93) may be made in a seam or the material may be cut the depth of the required placket. On the right hand side of the opening turn a hem the required width. (An inch to an inch and one-half is the average.)


Fig. 93.
Hemmed Placket.

Keep the width of the hem even its entire length. Baste and then hem to the skirt.

Turn down a narrow hem on the left side of the opening and to the right side of the skirt. Using the narrow hem, which is usually onefourth or one-half inch wide, makes a neat finish at the bottom of the


Fig. 94.
Extension Placket.
placket that is not obtained when the narrow hem is made on the wrong side of the skirt.

Lap the wide hem over the narrow hem and backstitch across the width of the wide hem at the end of the placket. Refer to Half-sleeves project for backstitching.
For the extension placket (Fig. 94) sew a piece of material, cut on the length of the goods and twice the length of the opening, around the opening. The right side of the strip is placed to the right side of the skirt. Make a very narrow seam and as you stitch around the bottom of the opening take care that no plaits are made in the skirt. If you are sewing on the strip by hand, the plaits can be avoided by holding the end of the opening over the first finger of the left hand, letting the strip and the skirt curve on the finger making a stitch at a time.

The width of the strip depends upon the material; for the average underwear material the strip is cut two inches wide.

The strip is then creased down to the wrong side about one-fourth of an inch and basted down even with
the line of stitching. Hold the work to the light and see that no part of the strip extends below the stitching that holds the strip to the skirt. The strip must pull perfectly straight; it is wrong, if there is the slightest curl in it. Stitch by machine, or hem down by hand. Do as much hand work as you can in the projects as it will give you the necessary practice.

The right side of the extension placket is turned back its width to the wrong side of the skirt and basted to the top edge of the skirt; while the left side of the extension is permitted to remain extended and is held in place by the belt.

To make the faced and extension placket, cut a strip on the length of the goods an inch longer than the length of the opening and about two inches wide. Sew the strip to the left side of the placket putting the right side of the strip to the right side of the skirt and even with the top. Do not make the seam too deep. Turn in the opposite raw edge of the strip and baste down even with the stitching that holds the strip to the skirt. Stitch by machine or hem by hand.

For the right side of the placket cut a strip on the length of the goods an inch longer than the opening and about one and one-half inches wide. Stitch to the right side of the opening, putting the right side of the strip to the right side of the skirt, and even with the top.
Turn down the piece just stitched creasing on the line of stitching. Turn in the raw edge of the strip making the width of the facing equal to the extension on the opposite side
of the placket. Baste the facing and then hem to the skirt.

Turn up the bottom of the exten sion to the front side, lap the faced side over the extension and hem to the faced side.
Trim off any extra thickness at the end of the extension and backstitch the faced side at the bottom about one-fourth inch above the hemming that holds the extension. Fasten the thread securely.

You now have three styles of plackets from which to choose.

If the placket of your skirt is at the center of the back, you may use any of the plackets given, but if the opening is at the front or side use either the extension or the faced placket.

## RESUMÉ

What advantage is there in giving you a chance to choose the style of placket you wish for your skirt?

Did you try to make each placket before deciding?

Did you have any difficulty in making any of the plackets?

Which placket do you like the best? Why?

Save the practice plackets you have made and put them in your record book.


Fig. 95.
Putting on band by hand.

## PUTTING ON THE BAND

Take your waist measure loosely. Add to this measure the width of the extension, if you are making the extension or the faced placket, add one inch for the turn-in at the ends and the shrinkage.

## Waist Measure + Width of Extension + Material to Turn in at Ends $=$ the Band.

On the length of the goods, cut the band the required length and two and one-half inches wide.

Fold the band in two equal parts to locate the center, if the skirt opens at the center back or the center front.

Pin the center of the band to the center of the skirt.

Turn down to the wrong side onefourth inch at each end.

Pin the ends of the band even with the sides of the placket. (Fig. 95.)

If there is fullness in your skirt, adjust it to the back.

Baste the band to the skirt, putting the seam on the wrong side and making the seam one-fourth inch wide.

Stitch the band to the skirt. Remove the bastings.

Turn down the opposite raw edge of the band one-fourth inch to the wrong side.

Fold the band over the seam and baste on the line of stitching. The band must not extend below the first stitching of the band. Hold to the light and you will readily see if the band is perfectly straight. The band must pull straight on the length also. If it curls in the least, the band is imperfectly put on.

Hem the band to the skirt.
Overhand the open ends.
Remove the bastings.

Put the button on the left side of the band at the center of the end. Put the button-hole on the right side of the band at the center of the end: (Refer to Buttons and Buttonholes in the Corset Cover project.)
Put the skirt on and turn up the hem, making the skirt the required length.

When basting the hem, use a gauge for the measuring. (Refer to Cooking Cap project.)

When basting the hem, it will be necessary to lay an occasional plait in order to take up the extra fullness. When placing these little plaits, be sure that the warp threads of the hem follow the warp threads of the skirt.

A skirt may be finished at the bottom with : A Hem,
Tucks,
Insertion, A Ruffle or Flounce.
The ruffle or flounce may be put on the edge of the skirt or it may be set upon the skirt. Each treatment has several ways of finishing, each in itself a correct way. The following outlines will give you some idea of the finishings used:

## Ruffle on edge of skirt-

1. Set into the hem. (Fig. 96.)
2. Finished with a French seam. (Fig. 97.)
3. Finished with a French Fell. Fig. 98.)
4. Rolled and whipped on. (Fig. 99.)

Ruffle set upon the skirt-

1. Finished with a tuck. (Fig. 100.)
2. A bias tape. (Fig. 101.)
3. A finishing braid. (Fig. 102.)
4. A heading. (Fig. 103.)


Fig. 96.
Set into the hem.


Fig. 97. Finished with French Seam.


Fig. 98.
Finished with a French Fell.


Fig. 99.
Rolled and Whipped.


Fig. 100
Finished with a Tuck.


Fig. 101.
Finished with Bias Tape.


Fig. 102. A Finishing Braid.


Fig. 103.
A Heading.

## THE RUFFLE OR FLOUNCE

The Ruffle or Flounce is the most common form of trimming the Underskirt. Cut the ruffle according to the directions given in the pattern. When a ruffle is made without the use of a pattern it is cut so as to have it one and one-half the fullness of the skirt.

A ruffle may be cut on the width of the material or on the bias.

One sometimes sees a ruffle cut on the length of the material, but this is the exception rather than the rule. There are good reasons for not doing it, except when effect can be had in no other way.

Join the widths of material for the ruffle and finish at the bottom with a medium sized hem. A hem from one to two inches is all right on gingham.

A flounce of coarse curtain net is often used on gingham underskirts and is quite effective. If the net is used it is faced to the right side with a bias of the gingham about two or two and one-half inches wide.

Fold the flounce in two equal parts and then fold again, thus dividing the flounce in four sections. Mark the sections by cutting a small notch at the top of the ruffle.

Gather each of the four sections. Make a double row of gathers oneeighth of an inch apart. Draw up the gathering threads and adjust the gathers. (Refer to Cooking Cap project.)

Pin the center of the front of the ruffle to the center of the front of the skirt. Pin the center of the back of the flounce to the center of the back of the skirt. Pin the quarter markings of the flounce to the quarter sections of the skirt. Now with the flounce adjusted at four points, adjust the gathers so that the fullness will be equally distributed. Baste the ruffle to the skirt. Stitch the ruffle to the skirt, putting the line of stitching between the two rows of gathers.

Trim off any extra material at the top of the ruffle. Be watchful and do not cut the skirt.

Make a gauge for one-half inch. Measure one-half inch above the stitching, crease and baste along the creased line. (Fig. 104.)
Bring creased edge even with the stitching and baste. Stitch the edge of the tuck to the skirt. Stitch on
the edge. Turn the skirt wrong side out and stitch down the folded edge. Stitch on the edge. Fig. 105.)


Fig. 104.


Fig. 105.

## STUDENT'S RECORD

The Record book for this project should be very rich in memoranda of lessons involved. If you have the time, make the plackets and mount them, or make sketches showing that you have the idea of how they look.

Secure samples of materials suitable for underskirts and estimate the amount of material needed and the approximate cost of the skirt.

Go to the store and look at the garments on sale and make a comparison of the ready-to-wear skirt and the one you made.

Give three points in favor of the skirt made by you.

Give three points in favor of the ready-to-wear skirt.

Secure pictures of underskirts for different occasions.

## QUESTIONS

What do you understand by a commercial pattern?

How many makes of commercial patterns do you know?

What points in commercial patterns are similar?

What argument would you use in favor of commercial patterns?

Name materials suitable for underskirts.

Give three facts about taffeta that would not be in favor of its use for every day wear.
Name three types of plackets. Describe each.

Why should a band be made on the length of the goods?

Describe the making of a French seam.
Describe the method you used in attaching the ruffle.

Define the following terms: Selvage, warp, hem, seam, overhand.

Give directions for making a corset cover for a fourteen-year-old girl. State amount and cost of materiais.

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