



LIFE·PAC®

Family and Consumer Science

Student Book

Unit 5



Alpha Omega Publications®

FAMILY AND CONSUMER SCIENCE 5

THE CLOTHES YOU SEW

CONTENTS

I. SEWING EQUIPMENT	2
Small Tools	2
Sewing Machine	4
Safety	8
II. BASIC SEWING	11
Hand Stitches	11
Machine Stitches	14
Seams and Seam Finishes	16
Darts, Tucks, Pleats, Gatherings, and Facings	20
Closures	25
III. SELECTING PATTERN, FABRIC, AND NOTIONS	32
Fit	32
The Language of Patterns	36
Pattern	42
Fabric	42
Fabric Preparation	44
Notions	46
IV. LAYOUT, CUTTING, MARKING, AND PRESSING	49
Layout	49
Cutting	50
Marking	51
Pressing	52
V. SEWING PROJECT	55
Construction Checklist	56
Sewing Evaluation Form	58
Glossary	61
Bibliography	62

Author:
Editor:
Illustrations:



Alpha Omega Publications®

Marcia Parker, M.Ed.
Alan Christopherson, M.S.
Alpha Omega Graphics

804 N. 2nd Ave. E., Rock Rapids, IA 51246-1759

© MM by Alpha Omega Publications, Inc. All rights reserved.

LIFEPAC is a registered trademark of Alpha Omega Publications, Inc.

All trademarks and/or service marks referenced in this material are the property of their respective owners. Alpha Omega Publications, Inc. makes no claim of ownership to any trademarks and/or service marks other than their own and their affiliates', and makes no claim of affiliation to any companies whose trademarks may be listed in this material, other than their own.

THE CLOTHES YOU SEW

Sewing for yourself is not only fun and exciting, but also gives a sense of self-satisfaction. Whether you sew a garment to wear or create something for the home, your completed project will be an accomplishment.

Many small sewing tools were discussed in LIFEPAC® 4. Additional tools will be introduced in this LIFEPAC, along with a detailed description of the sewing machine and its parts. Sewing safety will also be addressed. Sewing skills will be developed in both hand and machine sewing techniques. This will prepare you for your sewing project and further develop your sewing skills notebook begun in LIFEPAC 4.

Choosing a pattern and your own perfect fabric will make your project unique. Once the techniques of layout, cutting, and marking are mastered, construction begins. With each step of construction, anticipation increases until the finishing touches of the completed garment or project.

Student: You will continue working on your *Sewing Skills Notebook*. Reminder: fabric should be cut with pinking shears to prevent unraveling. Place glue on one edge of the fabric about $\frac{1}{2}$ " to 1" wide and stick it on its own sheet in the notebook. Leave the material loose on three sides so the teacher can check both sides of your sewing. Label each page with the name of the appropriate stitch or technique. For further organization, dividers may be added with the following names: Hand Stitches, Machine Stitches, Seams, Seam Finishes, Darts, Tacks, Pleats, Gathers, Hand-sewn Closures, and Machine-sewn Closures.

OBJECTIVES

Read these objectives. The objectives tell you what you will be able to do when you have successfully completed this LIFEPAC.

When you have finished this LIFEPAC, you should be able to:

1. Explain and demonstrate the use of small sewing tools.
2. Identify the parts of the sewing machine.
3. Understand and list basic sewing safety rules.
4. Demonstrate basic sewing techniques.
5. Select a pattern that is the correct size and style to flatter your figure.
6. Select fabric and notions appropriate for your pattern.
7. Interpret the pattern envelope, guide sheet, and pattern symbols.
8. Understand the layout and cutting of fabric.
9. Use a tracing wheel and tracing paper to transfer pattern markings from the pattern to the fabric.
10. Correctly press seams and darts.
11. Complete a sewing project which demonstrates the knowledge and skills learned.

I. SEWING EQUIPMENT

Gathering the supplies and getting started is always the hardest step in any project. Once you have set up a sewing station or corner of a room with the proper tools and equipment, you should be eager to start your project.

It is important to understand the use of each piece of equipment before you begin. A short review of sewing tools and their uses (including an in-depth study of the sewing machine) will begin this section, followed by a list of safety rules.

SECTION OBJECTIVES

Review these objectives. When you have completed this section, you should be able to:

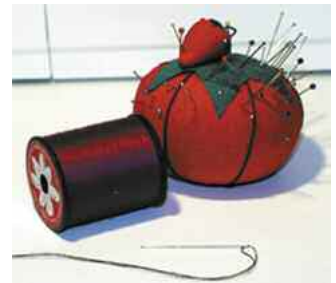
1. Explain and demonstrate the use of small sewing tools.
2. Identify the parts of the sewing machine.
3. Understand and list basic sewing safety rules.



SMALL TOOLS

Of course, the first things that come to mind when you think of sewing are needles and thread. As mentioned in the previous LIFEPAAC, it is good to have a variety of basic thread colors.

Needles. In addition to “sharps,” hand sewing needles come in a variety of sizes, but should all be of good quality steel. The sizes range from 1-13; the larger the number the shorter and finer the needle. Needles are named for their intended purpose, fabric structure (whether knitted or woven), weight, and thread thickness. (See Chart *Types of Needles*) A needle should be fine enough to easily slip through fabric, yet heavy enough not to bend or break.



Types of Needles		
TYPES	NAME	DESCRIPTION/USE
General Hand Sewing: general purpose	Sharps	Most common. Medium length and round eye. Suitable for almost all fabric weights.
	Between	Also known as (aka) quilting needles.
	Milliners	Longer than others in this group. Useful for basting.
	Ball-points	Resemble sharps, except the point is rounded to penetrate between knit yarns.
	Calyx-eyes	Like sharps, except thread is pulled into a slot rather than an eye.

<p>Needlecraft: embroidery, needlepoint, decorative beading, etc.</p>	<p>Crewels</p> <p>Chenilles</p> <p>Beading</p> <p>Tapestry</p>	<p>Sharp, medium-length, used for embroidery. Long eye allows several strands of embroidery floss to be threaded.</p> <p>Sharp and heavy, used in yarn embroidery.</p> <p>Long and thin, for beading and sequin work.</p> <p>Heavy, with blunt points. Used for needlepoint and tapestry work.</p>
<p>Darning: Variety of lengths and diameters, accommodating most darning or mending jobs.</p>	<p>Cotton darners</p> <p>Double longs</p> <p>Yarn darners</p>	<p>Used to darn with fine cotton or wool.</p> <p>Like cotton darners, but longer and able to span larger holes.</p> <p>Long and heavy, necessary for yarn darning.</p>
<p>Heavy-Duty Sewing: Glover and sailmaker types have wedge-shaped points to pierce leather and leather-like fabrics in such a way that the holes resist tearing.</p>	<p>Glovers</p> <p>Sailmakers</p> <p>Curved needles</p>	<p>Short, round-eye needles with triangular points that pierce leather, vinyl, or plastic without tearing.</p> <p>Similar to glovers, except their triangular point extends part way up the shaft. For canvas and heavy leather.</p> <p>For upholstery, braided rugs, or lamp shades—anywhere a straight needle is awkward.</p>

Sewing machine needles should be fine enough to penetrate the fabric without marring it, yet have a large enough eye that the thread does not fray or break. The sizes range from 9, a fine needle used for light-weight fabrics, to size 18 for heavy fabrics. The needle should be changed after it has been used to stitch two or three garments because it becomes bent or **burred** (rough-edged) from use.

There are a number of *straight pins* used for sewing. The longer the pin, the thicker it is. A *seamstress* or *silk pin* is suitable for light- to medium-weight fabrics. The standard length is 1¹/₁₆". It is the most common pin and is the one suggested for your sewing/mending kit. There are also *pleating pins*, which are extra fine and used for delicate fabrics, and long pins used for heavy materials. There are different types of pin heads as well, the *flathead* being the most common. The *color ball* is easy to remove and see. The "T" is for heavy fabrics or very loose knit.

Scissors. Besides *sewing scissors* and *pinking shears*, there are two other handy types of scissors that you should consider adding to your kit. *Bent-handle dressmaker's* are the best for cutting out patterns, for they allow the fabric to lie flat because of the angle of the lower blade. Thus, they get a more even cut that follows the pattern the most accurately. They come in 6" to 12" lengths. Another handy pair of scissors to have are *embroidery scissors*. They are quite small and useful for not only embroidery, but for general needlework, ripping, clipping, and opening machine-stitched buttonholes.

Review the description and use for measuring devices (tape measure, seam, hem gauge, etc.) and sewing aids (thimbles, seam ripper, etc.) in LIFEPAK 4, Section IV. There are two other marking devices one should know how to use: *Tailor's chalk*, ideal for construction markings and fitting alterations; and a *tracing wheel* (with dressmaker's *tracing paper*) to transfer pattern markings.

Other sewing aids that you may consider adding to your kit are a *pin cushion* and extra **bobbins**, the spool-like thread holders that supply the bottom thread to sewing machines.



Answer the following questions.

- 1.1 Needles range in size from 1-13; the larger the number the _____ and _____ the needle.
- 1.2 Needles are named for their intended _____, fabric _____, weight and _____ thickness.



Match each phrase with the correct term.

- | | |
|---|-------------------|
| 1.3 _____ used for darning larger holes | a. ball-points |
| 1.4 _____ used in embroidering with yarn | b. betweens |
| 1.5 _____ thread is pulled into a slot rather than through an eye | c. calyx-eyes |
| 1.6 _____ quilting needles | d. chenilles |
| 1.7 _____ have triangular points to prevent tearing leather, vinyl or plastic fabrics | e. curved needles |
| 1.8 _____ rounded point so it can penetrate between knit yarns | f. double longs |
| 1.9 _____ most commonly used needle | g. glovers |
| 1.10 _____ used on upholstery | h. sharps |

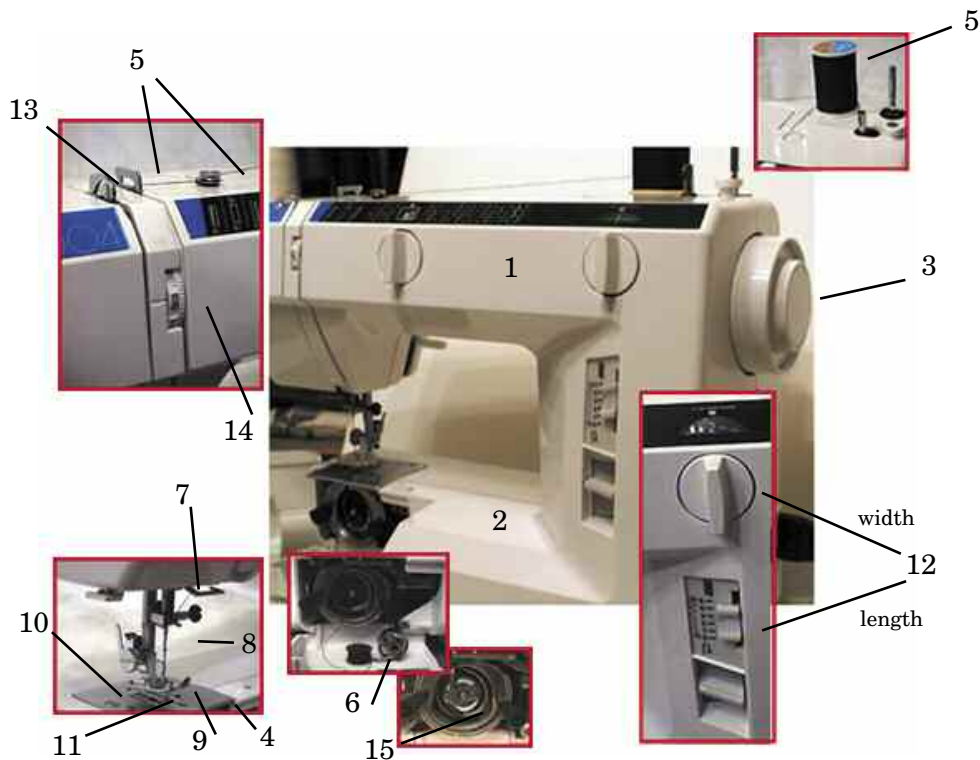


Answer true or false. If the statement is true write true in the blank. If the statement is false, change the underlined word or words to make the statement true. Write the correct answer in the blank.

- 1.11 _____ A needle should be changed after it has been used to stitch 8-9 garments.
- 1.12 _____ The longer a straight pin is, the thinner it is.
- 1.13 _____ Pleating pins are used for delicate fabrics.
- 1.14 _____ The most common pin head is the color ball type.
- 1.15 _____ Pinking shears are the best for cutting out patterns.
- 1.16 _____ A tracing wheel is used to transfer pattern markings.
- 1.17 _____ Tailor's chalk is used for fitting alterations.
- 1.18 _____ The bobbin is a thread holder that supplies the top thread for the sewing machine.

SEWING MACHINE

There are many sewing machine types and brands, but they are all basically similar. The operating parts labeled on the machine shown are common to any average machine that does both straight and zigzag stitching. Placement of some items may differ based on the machine used.



Each part has a specific function. The following list should help you understand the workings of a sewing machine better.

1. **head:** metal portion of the machine containing most of the mechanical parts
2. **bed:** the head's flat base which rests in the cabinet
3. **handwheel or balance wheel:** the wheel to the right of the upright section of the head, used in starting and stopping the machine
4. **slide plate:** the metal plate covering the **shuttle** (see #15)
5. **spool pin and thread guides:** the pieces which hold and guide the thread to be used as the upper thread in stitching
6. **bobbin:** the metal or plastic spool that the thread is wound around to be used as the lower thread in stitching
It fits into a shuttle, filled with thread by means of a bobbin winder.
7. **needle bar:** holds the needle and carries upper thread down to it
8. **needle:** a needle with an eye and point at one end and a flat side on the other
It is inserted into the needle bar and held in position with a clamp. It should be placed in the needle bar so that the flat side is in the groove and pushed up as far as it will go. The clamp screw is then tightened. If the needle is not in the correct position, the machine will not operate properly and the thread or needle will break.
9. **presser foot:** the piece which holds the fabric in place as you stitch raised and lowered by means of a lever called a presser-bar lever found on its back
For stitching, the presser foot is lowered gently with the fabric in place and then raised to remove the fabric when the stitching is finished.
10. **throat plate:** the metal plate directly under the needle
(In our illustration, this and #4 are united in one piece.)
11. **feed or feed dog:** the part which keeps the material moving as it is being stitched
It is a tooth-like part located under the presser foot which projects upward through the throat plate.

12. **stitch regulator:** the device used for lengthening or shortening the stitch; there is another device for changing the width of the stitch
13. **take up lever:** a lever through which the upper thread passes, which moves up and down as the machine is operated
14. **tension regulator:** This device regulates looseness and tightness of stitches by controlling the pull on the thread as it comes from the needle. There is a similar tension on the lower thread of the bobbin, regulated by means of a screw on the bobbin case.
15. **shuttle:** the sliding container for the bobbin

light: (not pictured) located on the bottom of the head, it illumines your view of your work

pressure regulator: (not pictured) regulates the force of the presser foot as it holds the fabric layers in order to move them together evenly during stitching

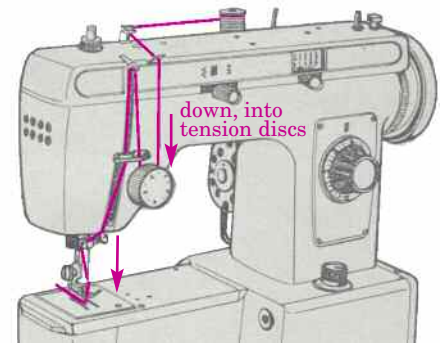
tension discs: (not pictured) regulates the tightness of the upper thread

reverse button: (not pictured) device used to move the material backwards

Most home sewing machines are *locksmith machines*, meaning that they use two separate threads, one for the needle and one for the shuttle-and-bobbin assembly. As the machine sews, it interlocks the two threads in the fabric. The first thread, passing through the eye of the needle, is pushed through the fabric making a loop below. The bobbin thread is carried through the loop by a shuttle hook, “locking” the stitch.

Attachments. Many machines have attachments for sewing hems, zippers, buttonholes, and other details, although the newer computerized machines have the capabilities of completing these tasks without any extra attachments. Some machines have microprocessors enabling them to sew a number of stitches automatically. There is also a special machine called a *serger* that cuts and finishes seam edges, giving them a professional or store-bought look.

Threading. One process that might seem confusing is the upper threading of the machine. The parts of various machines may be in different locations with different appearances, but the upper progression of the thread is much the same. It is fed from the spool through the *tension discs* (which regulate the looseness and tightness of stitch), then to the take-up lever, and finally down to the needle. The number of thread guides between these points will vary with the machine.



Threading a sewing machine.

There are two important things to remember before threading any machine. First, raise the presser foot so the thread will be able to pass between the tension discs. Second, bring the take-up lever to its highest point so the needle will not come unthreaded when the first stitch is started. The instruction manual should give directions for threading the upper machine and the bobbin.



Complete the following activities.

Circle the sewing machine parts in the word search. Then match the part with the correct definition, description used below. Words may overlap or be written backwards.

F	S	S	L	I	D	E	P	L	A	T	E
K	D	E	A	N	I	P	L	O	O	P	S
N	E	T	A	L	P	T	A	O	R	H	T
G	R	N	E	S	L	P	F	R	E	D	I
A	H	E	C	O	E	R	E	E	V	I	T
N	E	E	D	L	E	E	E	V	E	T	C
O	Y	D	A	S	H	S	D	E	R	L	H
B	G	L	S	D	W	S	D	L	S	S	H
N	O	E	B	Z	D	U	O	P	E	H	C
R	R	B	E	D	N	R	G	U	B	U	L
P	H	A	B	L	A	E	S	E	U	T	I
B	O	R	E	I	H	Y	R	K	T	T	G
D	O	R	P	L	N	E	E	A	T	L	H
X	Y	M	N	T	O	P	U	T	O	E	T
S	C	S	I	D	N	O	I	S	N	E	T

- 1.19 The _____ is the portion of the sewing machine that rests on the cabinet.
- 1.20 The _____ is the portion of the sewing machine that contains most of the mechanical parts.
- 1.21 The _____ is the “thread holder” that has an eye and a point at one end and one flat side on the other end.
- 1.22 The _____ is the piece which holds the fabric in place as you stitch.
- 1.23 The _____ and the thread guides are the pieces that hold and guide the thread to be used as the upper thread in stitching.
- 1.24 The _____ is the piece that holds the needle and carries upper thread down to it.
- 1.25 The _____ is the metal plate directly under the needle.
- 1.26 The _____ is the tooth-like part that keeps the material moving as you stitch.
- 1.27 A _____ regulator regulates the length or width of a stitch.
- 1.28 The _____ is a metal or plastic spool that holds the lower thread for stitching.
- 1.29 The _____ is the bobbin case.
- 1.30 The _____ is the metal plate covering the bobbin case.
- 1.31 The _____ is the item used for starting and stopping the machine.
- 1.32 The _____ is the device that thread passes through and moves up and down.
- 1.33 The _____ is the device used to move material backwards.
- 1.34 The _____ regulates the amount of force the presser foot exerts on the fabric.
- 1.35 The _____ regulates looseness and tightness of stitch.

1.36 The _____ regulate the looseness and tightness of the upper thread.

1.37 The _____, located on the bottom of the head, illumines the view of your work.



Complete the two demonstrations.

1.38 Point to and vocally name the parts of the sewing machine. Include all of the parts mentioned in the above activity.

1.39 Thread the sewing machine: both the upper and bobbin threads.



Adult Check

Initial

Date

SAFETY

Just as there are important safety rules to obey in the kitchen, there are rules for sewing as well. Below is a list of the more important safety precautions while sewing.

1. Put pins and needles in a pincushion, never in your mouth, on your clothes, or on upholstered furniture.
2. Keep sharp objects out of your lap.
3. Pass sharp objects such as scissors and shears to others handle first.
4. Store scissors and other sharp objects in holders and other secure places.
5. Keep blades of shears and scissors closed when not in use.
6. While learning to operate an electric sewing machine, use the slow speed.
7. Keep your fingers away from the path of the sewing machine.
8. Do not touch the hot light bulb on the sewing machine.
9. Keep the machine's electric cord on the floor so that it will not cause anyone to trip.
10. Disconnect the cord from the outlet before disconnecting it from the machine.
11. Close the sewing machine carefully to avoid damaging the electric cord.
12. Keep the drawers or doors of the sewing machine storage cabinet closed to avoid bumping into them.
13. When pressing, keep your hands away from the steam. Turn off the iron when not in use to avoid accidental burns. An unattended hot iron is a fire hazard.
14. Never stand on a chair while measuring the hem of a garment.



Always practice safety.



Complete the following activity.

1.40 Read the following paragraph about Calamity Claire’s sewing experience and complete the question that follows.

Calamity Claire decided she needed to shorten a skirt. Her mother carefully measured the new hem line for her. As Calamity jumped down from the chair, she ran into the cabinet drawer she had forgotten to close previously, when she got straight pins out. Ouch! When she finally sat down to the sewing machine to stitch the hem, she nearly stitched her fingers as well as the skirt. OOPS! Calamity carefully removed the pins from the material as she stitched so that the machine needle would not hit one and break, sticking them in the lapel of her jacket so that none would fall on the floor. When she finished sewing, she carefully took the scissors from her lap and cut the end threads. As she got up to go press the hem, she tripped over the sewing machine cord. While pressing the new finished hem, she burned herself with the iron’s steam. Ouch! Calamity was relieved to have the project done and promptly unplugged the cord from the machine before pulling it from the outlet. She put her skirt on and rushed out the door, leaving the iron on. With a slight limp, burned hand and straight pins still clinging to her jacket, Calamity Claire was quite proud of her accomplishment.



Calamity Claire

Which safety rules did Calamity Claire forget?

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____
- f. _____
- g. _____
- h. _____
- i. _____



Review the material in this section in preparation for the Self Test. The Self Test will check your mastery of this particular section. The items missed on this Self Test will indicate specific areas where restudy is needed for mastery.

SELF TEST 1

Answer true or false (each answer, 3 points).

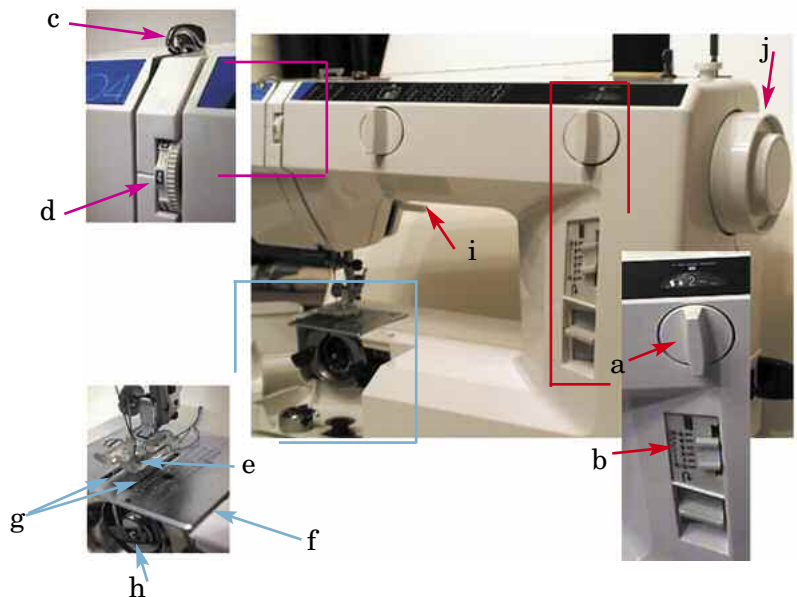
- 1.01 _____ Tension discs and thread guides control the flow of threads.
 1.02 _____ The presser foot moves the fabric as you stitch.
 1.03 _____ The balance wheel is used for starting and stopping the machine.
 1.04 _____ The sewing machine will not operate properly if the needle is not in correct position.
 1.05 _____ The bobbin controls the pull on the thread as it comes from the needle.

Matching (each answer, 5 points).

- | | | |
|-------|--|----------------------|
| 1.06 | _____ keeps material moving toward the back of the machine while stitching | a. bobbin |
| 1.07 | _____ holds fabric in place while you stitch | b. feed dog |
| 1.08 | _____ device used for lengthening or shortening the stitch | c. needle bar |
| 1.09 | _____ spool which holds the lower thread used in stitching | d. presser foot |
| 1.010 | _____ metal plate directly under the needle | e. spool pin |
| 1.011 | _____ regulates looseness and tightness of stitch | f. stitch regulator |
| 1.012 | _____ holds the needle | g. tension regulator |
| | | h. throat plate |

Match the correct letter of the sewing machine part by its correct name (each answer, 5 points).

- 1.013 _____ bobbin case
 1.014 _____ feed dog
 1.015 _____ handwheel
 1.016 _____ presser foot
 1.017 _____ light
 1.018 _____ stitch length regulator
 1.019 _____ stitch width regulator
 1.020 _____ tension regulator
 1.021 _____ thread take-up lever
 1.022 _____ throat plate



80
100



Score _____
 Adult Check _____

Initial _____ Date _____