## Characteristics of Fabric Fibers

<table>
<thead>
<tr>
<th>Fiber</th>
<th>Characteristics*</th>
<th>Care* (See label)</th>
<th>Durability*</th>
<th>Resist Sun Damage*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nylon</td>
<td>Easy to dye, drapes well, retains shape,</td>
<td>Washable at low temp.</td>
<td>Very strong, durable, resists abrasion</td>
<td>Fair but can be modified</td>
</tr>
<tr>
<td>Olefin</td>
<td>Easy care, resist moisture. Stained easily by grease and oil</td>
<td>Washable. Do not dry clean.</td>
<td>Very strong, durable, resists abrasion</td>
<td>Fair – can add stabilizers</td>
</tr>
<tr>
<td>Polyester</td>
<td>Retains shape well, resists wrinkles</td>
<td>Washable</td>
<td>Strong, durable, resists abrasion</td>
<td>Good to excellent</td>
</tr>
<tr>
<td>Acrylic</td>
<td>Soft like wool, colorfast</td>
<td>Some washable or dry clean</td>
<td>May form “pills,”</td>
<td>Excellent</td>
</tr>
<tr>
<td>Acetate</td>
<td>Soft feel, silky look, drapes well. Poor wrinkle recovery. Weaker when wet.</td>
<td>Dry clean or some hand washable</td>
<td>Low or poor resistance to abrasion.</td>
<td>Weakened by long exposure unless modified for sunlight resistance</td>
</tr>
<tr>
<td>Rayon</td>
<td>Similar to cotton, easy to dye, drapes well, wrinkles easily unless treated, may shrink</td>
<td>Dry clean or some hand washable</td>
<td>Not as durable or abrasion resistant.</td>
<td>Poor, not recommended for dressers</td>
</tr>
<tr>
<td>Cotton</td>
<td>Absorbent, easy to dye, may wrinkle easily</td>
<td>Washable – may shrink unless treated</td>
<td>Good abrasion resistance</td>
<td>Good, may weaken after long exposure</td>
</tr>
<tr>
<td>Silk</td>
<td>Strong fiber but lightweight, dyes well, drapes well</td>
<td>Usually dry cleaned.</td>
<td>Not as durable or abrasion resistant.</td>
<td>Poor – yellows and degrades</td>
</tr>
<tr>
<td>Wool</td>
<td>Holds shape well, drapes well, resists wrinkles, may shrink &amp; felt when wet and agitated</td>
<td>Dry clean unless special finish to wash.</td>
<td>Fair to good abrasion resistance</td>
<td>Fair – eventually loses strength</td>
</tr>
</tbody>
</table>

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Find more at [http://4h.unl.edu/designdecisions](http://4h.unl.edu/designdecisions)
All clothing is made of fibers. There are many different kinds of fibers. Each kind of fiber has its own characteristics. Fibers are either NATURAL or MANMADE.

### Natural Fibers

*From plants or animals

*Cotton, wool, linen, and silk

Cotton—from cotton plants  
Wool—mainly from sheep  
Silk—from silkworm’s cocoon

### Manmade Fibers

*From chemicals in a factory

*Polyester, nylon, acrylic, acetate, rayon, and spandex olefin

All clothing sold in the U.S. is required to have a fiber identification label to name the fiber(s) used in the clothing. Once you know what the clothing is made of, you can predict how the clothing will perform (absorbency/comfort, will it wrinkle or not, how will it stand up to wear, will it be easy to care for).
Basic Sewing Machine Parts/Their Purpose and Function:

1) Bobbin—Provides the bottom thread, the underside of the stitches a sewing machine forms. It is useful to wind extra bobbins at once to save time later on in a project.

2) Bobbin Case—Holds the bobbin and has a specific threading pattern that provides tension to the bobbin thread. It is either built into the machine or removable—either way, the bobbin is manually placed into it.

3) Bobbin Winder—Takes thread from the top thread spool and winds it on the bobbin. Some sewing machines have a bobbin that is filled in place in the bobbin case. More often it is located on the top of the machine and the empty bobbin must be removed from bobbin case.

4) Feed Dog—Feeds the fabric under the presser foot while you guide the fabric. It regulates the stitch length by controlling how much fabric passes under the presser foot as the machine stitches. Many machines allow the feed dog to be disengaged for hand controlled sewing such as for quilting or mending.

5) Foot Pedal—The speed of the machine is controlled by how much pressure you apply to the pedal. More pressure, machine sews faster. Less pressure, it sews slower.

6) Hand Wheel—Main purpose is to slowly turn the needle by hand.

7) Needle Position Dial—Allows the needle to be positioned left, center, or right.

8) Power Plug—Feeds electrical power to the sewing machine.

9) Presser Foot—Puts downward pressure on the fabric as it is fed under the needle. The feet are interchangeable and are designed for different purposes such as zig-zag, decorative stitching, or inserting a zipper.

10) Presser Foot Lever—Raises and lowers the presser foot. When it is in the upward position, the upper thread tension is released.

11) Pressure Adjustment Dial—Sets the amount of pressure that the presser foot exerts on the fabric. The pressure varies depending on the weight of the fabric being used. The dial is usually located on the top left of the sewing machine, though not all machines have this dial.

12) Reverse Lever—Machine sews in reverse when pressed. Locks in stitches and secures seams so they won’t come apart.

13) Slide Plate—Provides access to the bobbin area and protects the bobbin area from thread and fabric being caught in moving parts when the machine is operating. Sometimes it is a hinged door that opens down and is located in the same area but on the machine front.

14) Spool Holder—Holds the top thread and is the first step of the thread being evenly fed to the machine needle. There are many different places the spool holder can be but it is usually located on the top of the sewing machine.

15) Stitch Length Adjustment—Adjusts the length of the stitches. The adjustment takes place at the feed dog, not the needle.

16) Stitch Width Adjustment—Allows you to vary the width of the stitches when sewing zig-zag.

17) Take-Up Lever—One of the guides the top thread is threaded through. It moves the needle and top thread up and down.

18) Tension Control Dial—Controls the amount of pressure applied to the thread for an even feed to the machine needle causing an evenly formed stitch.

19) Throat Plate/Needle Plate—The removable plate above the feed dog that has seam guides engraved in it. It is a good idea to train your eyes to watch a seam guide not the needle for straight accurate seams.
**Laundry Guide to Common Care Symbols**

**Washing Instructions**
- Machine Wash, Cold
- Machine Wash, Warm
- Machine Wash, Hot
- Machine Wash, Cold Permanent Press
- Machine Wash, Warm Permanent Press
- Machine Wash, Hot Permanent Press
- Machine Wash, Cold Gentle Cycle
- Machine Wash, Warm Gentle Cycle
- Machine Wash, Hot Gentle Cycle
- Hand Wash
- Do Not Wash

**Bleaching Instructions**
- Bleach as needed
  - Any bleach, like Clorox®, may be safely used
- Non-chlorine Bleach as needed
  - Use only a color-safe bleach, like Clorox 2®
- Do Not Bleach
  - No bleach product should be used including detergents with bleach - or follow bleach package test procedures to test for bleach safety.

**Drying Instructions**
- Tumble Dry, No Heat
- Tumble Dry, Low Heat
- Tumble Dry, Medium
- Tumble Dry, High
- Line Dry
- Drip Dry
- Dry Flat
- Tumble Dry, Gentle Cycle, No Heat
- Tumble Dry, Gentle Cycle, Low Heat
- Tumble Dry, Gentle Cycle, Medium
- Do Not Tumble Dry

**Ironing Instructions**
- Iron, Steam or Dry, with Low Heat
- Iron, Steam or Dry, with Medium Heat
- Iron, Steam or Dry, with High Heat
- Do Not Iron with Steam
- Do Not Iron
- Do Not Dryclean

**Drycleaning Instructions**
- May appear with additional letters and/or lines
  - Take this item to a professional drycleaner
- Do Not Dryclean

**Care Labels: Your Guide to Easy Care**

Care labels provide helpful information that can save you time and money.

Cleaner, fresher clothes mean longer-wearing apparel.

And clothes that are bleachable are easier to get clean.

When a care label doesn’t mention bleach or says “Bleach when needed,” it means it is safe to use Clorox® liquid bleach. When the label says “Non-chlorine bleach when needed” use a non-chlorine (color-safe) bleach like Clorox 2®.

Because clothes can be mislabeled, follow the easy directions on Bleach container labels to test fabrics for colorfastness.
Primary Colors - Colors that cannot be made by mixing, Red, Blue and Yellow
Secondary Colors - Colors that are made by mixing two primary colors, purple, green and orange
Tertiary Colors - Colors that are made by mixing primary colors with an analogous secondary color, red-orange, blue-green, blue-violet, etc.
Analogous Colors - Colors that are next to each other on the color wheel, blue, blue-green, green
Complementary Colors - Colors that are directly across from each other on the color wheel, blue and orange, red and green, violet and yellow
WHAT’S IN MY SEWING BOX?

PINS
Pins are used to keep two or more pieces of fabric together as you sew.

NEEDLES
Used to sew by hand for a quick sew.

THREAD
Thread is used to sew fabric together.

THIMBLES
Thimbles protect your fingers while you sew by hand or put pins in your fabric.

TAPE MEASURE
Sewing tape measures are a flexible ruler that is used to measure for appropriate sizing

NEEDLE THREADER
Used to make it easier to thread the needle.

PIN CUSHION
They keep your pins organized.

SCISSORS
They are only supposed to be used to cut fabric and thread or they will get dull.

 PATTERNS
Patterns are a guide used to make a garment or another sewing item.

CHALK
Chalk helps you draw temporary lines on your fabric to guide where you cut or sew.

SEWING GAUGE
It is a little ruler that allows you to make multiple cuts or marks.

SAFETY PINS
They are used for many different things that allow you to keep fabric together without sewing or getting poked.

THREAD CUTTERS
You use them to cut thread or fabric in compact spaces.

ROTARY CUTTER
Used to do a straight cut.

BOBBINS
The bobbin thread is used to lock to lock the stitch when using a sewing machine.

SEWING BOX
And of course you need a box to store it all.
Pattern Symbols

1) Cutting line:
A solid, dark outer line to follow when cutting out pattern pieces. Sometimes it has a scissors symbol on it.

2) Stitching/Seam Line:
A dotted line inside the cutting line where your garment is sewn together, most often a 5/8-inch seam allowance.
Note: Stitching lines not typically included on multi-size patterns.

3) Grain line Arrow:
A straight line with an arrow at each end that should be set parallel to selvage (lengthwise or straight grain) of the fabric. It tells which way the fabric should face in the project.

4) Place on fold line:
An arrowed bracket pointing to the fabric edge. Place the pattern edge exactly on the fold of fabric to cut out – do not cut the fold.

5) Notches:
Single, double or triple diamonds that help match garment pieces to each other when sewing. Use a marking tool or cut around these notches so you can see these marks when the pattern is removed.

6) Circles or squares:
Other aids used for matching garment pieces when sewing. Be sure to mark these, too.

7) Lengthen or shorten line:
Used to alter the length of the garment piece.

8) Center front and back, fold line, and hemline:
These markings indicate helpful positions needed during garment construction.
Basic Hand Stitches

**Overhand Stitch**
A stitch made by taking diagonal stitches over the fabric edge. It is used to hold two pieces of fabric together.

**Running Stitch**
This stitch is made by going in and out of the fabric in even lengths. This is the most basic stitch for younger children to learn.

**Backstitch**
This is the strongest of hand stitches. Use it in hard-to-reach areas by making a stitch; bring up the needle half a stitch length behind and in front of previous stitch. Stitches on the underside appear twice as long as those on the upper side. It has the appearance of machine stitches on top with overlapping longer stitches on the bottom. Prick stitch is a variation of the backstitch with tiny stitches on the right side. It is used for decorative topstitching or inserting a zipper by hand.