

Go Green! Sew Green In 4-H

Sally Walter, 4-H Leader in Walla Walla, WA, waltera@wwics.com
MA in Apparel, Merchandising, Design, and Textiles (2007, Washington State University)



Introduction

This special 4-H activity was inspired by the ladies on the **Treadle On** list at **Quiltropolis**¹ who have been demonstrating their hand crank and treadle sewing machines at fairs, folk fests, and sheep to shawl shows for many years. Now, with the “green” environmental emphasis and the fall 2008 national 4-H promotional campaign, **Keeping It Green**², sewing on hand cranks is a portable and fun hands-on activity for 4-H events.

Catherine Eith of the Seattle, WA, area has been taking hand crank machines to events specifically to give kids an opportunity to experience sewing by making a bean bag they can take home. The basic instructions for the bean bags evolved from her twelve years of experience teaching children how to construct the bean bags.

Experience 4-H was the inspiration of Brenda Bryce, office assistant for WSU extension in Walla Walla, WA, and a recent past 4-H Council president in Walla Walla County.

Many thanks to Dick Wightman, list and site owner of **Treadle On**, for his dedication in providing an informational website and hosting an internet community whose goal is to teach machine maintenance skills and promote the use of antique and vintage “people powered” sewing machines.³

¹ **Treadle On** email list: <http://www.quiltropolis.net/maillists/maillistsdetail.asp?catid=Sewing+Machines>

² 2008 4-H promotion, **Keeping It Green**: _____

³ **Treadle On** site: <http://www.treadleon.net/>

I sincerely appreciate the members of **Treadle On** for sharing photos of their beautiful machines. Your photography skills made this guide come to life with great examples of the machines and their peculiar details.

Lastly but not least important are the members of **Treadle On** and the **4-H Clothing and Textiles** lists who provided expert advice editing this guide. Thank you for your assistance with corrections and tips.

The Experience 4-H Event

Experience 4-H serves as an opportunity to promote 4-H to the community and a means to recruit new members and new leaders. Be sure to make use of free public service announcements provided by area radio and TV stations and the newspaper if possible. The Walla Walla event used shade canopies over the activity tables⁴ decorated with balloons and banners to attract attention.

Besides the sewing project, activities included a small animal petting zoo⁵, a game table with string games like cat's cradle and spinning buttons, an opportunity to play with measuring cups and dry ingredients such as beans and brown sugar, and an informational display with brochures about 4-H. Each 4-H group participating in the event prepared an informational flyer about their 4-H club (see example following the instructions for the bean bag).

Since the sewing activity yields a bean bag, it would be fun to have a bean bag target set up in the game area. For 4-H events this might be a 4-leaf clover painted on a white background with Head, Heart, Hands, and Health circling the clover. A hole would be in each leaf of the clover.

Experience 4-H can be duplicated and adapted for any large community event, inside or outdoors. Extension staff, leaders, club members, and parents will enjoy the opportunity to participate and share learning experiences in a casual and friendly atmosphere. Be prepared to smile and have fun!

Machines

Models and Sources

Collecting machines for a **Sew Green** activity may be your biggest challenge. There are original hand crank machines to be found, but not many. Most likely machines will need to be converted to hand crank in order for you to have enough machines.

Craigslist⁶, **FreeCycle**⁷, local yard sales, and thrift stores may all be sources for rounding up the various models that are particularly suitable for conversion to hand crank sewing machines. For portability, look for **Singer** model 99s, 128s (also the 28s), 185Js, and the black **Singer Spartan** (model 192). These are fully functional three quarter size sewing machines that are lighter than similar full size models.⁸ If weight is not an issue, any **Singer** model or Japanese clone⁹ with a motor mount (or motor boss)¹⁰ and standard shaft for the handwheel will work. **Singer** model 66s, 15s,

⁴ Include chairs for the participants and volunteers.

⁵ Provide disinfectant hand wipes for the petting zoo.

⁶ **Craigslist**: <http://www.craigslist.org/about/sites>

⁷ **FreeCycle**: <http://www.freecycle.org/>

⁸ **Singer** ¾ model: length of bed 12 5/32", width of bed 6 9/16"

⁹ Clones: sewing machines made in Japan after WWII that have similarities to the vintage **Singer** machines

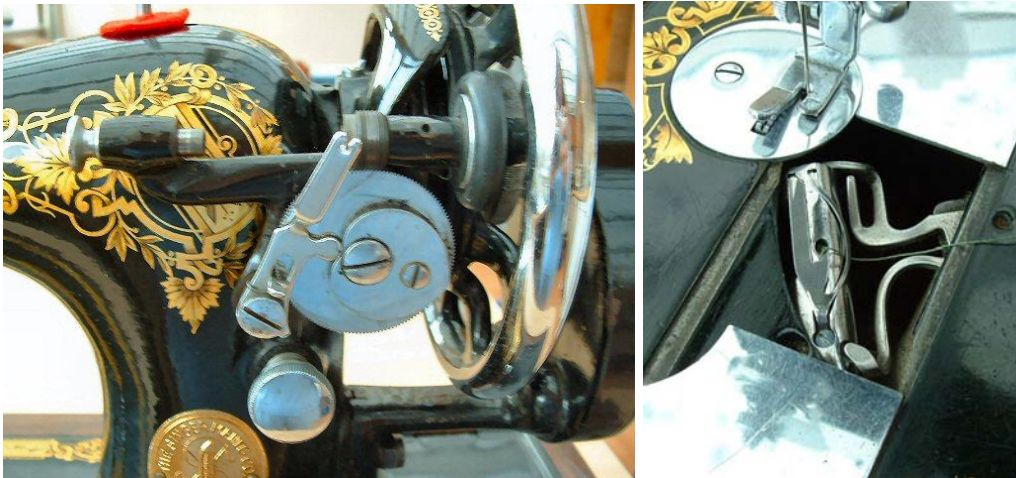
¹⁰ See motor mount (boss): <http://www.treadleon.net/sewingmachineshop/motorboss/motorboss.html>

and even a **Singer Fashion Mate** are all possibilities. The 99s used in Walla Walla's event cost twenty to twenty-five dollars each.

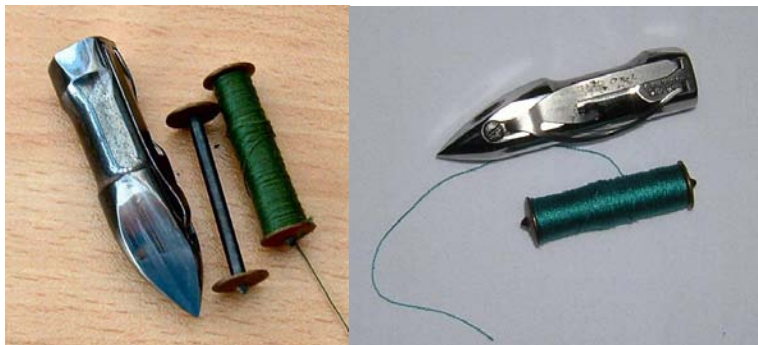


The **Singer 185J**¹¹ is a fun machine to have at 4-H events because it is green.¹² Conversion to a hand crank is particularly easy because it requires no adjustments to the bobbin winder when the spoked wheel and crank are added.

The **Singer 128** (also the similar 28) is a long bobbin/shuttle machine.¹³ The antique looking model 128 was made well into the 50s so it is not necessarily as old as it appears. Winding and inserting a long bobbin is a new and sometimes challenging experience. It may be preferable to have machines of all one bobbin style for ease of use. One advantage to the 28/128 models is that threads don't tangle and jam if a child cranks backwards (a crank is turned clockwise while the handwheel moves counterclockwise). Also, this model is reported to crank more easily than the 185s and some 99s.



Bobbin winder on a Singer 28 and shuttle in place in carrier



Shuttles (bottom and top side) and bobbins

¹¹ Katie Farmer of the **Treadle On** list at **Quiltropolis** provided the photo of the **Singer 185**.

¹² See a green **Singer Fashion Mate**, Olivia, at: <http://sewwonderful.blogspot.com/2008/07/treadling-singer-fashion-mate-252.html>

¹³ Kate Dicey of the **Treadle On** list provided the photos from the **Singer 28** on this page.

Dating Singer Models



During a public event, many people will ask the production dates of the machines being used. **Singer** provides dating resources at their site based on the serial number on the machines. Most models suitable for cranking have an engraved plate in front of the column on the right front of the bed of the machine (other models may have a serial number on the underside of the bed, near the left front). Production specifics can be researched at:

http://www.singerco.com/support/serial_numbers.html

Supplies and Sources for Converting a Machine to a Hand Crank

All of the recommended **Singer** models use the standard household sewing machine needle, a 15 x 1. Brand of needle is not an issue but **Schmetz** provides a quality product and packages are readily available at fabric stores and sewing machine shops.

Hand cranks and spoked wheels for our conversions were purchased from two sources¹⁴ for \$10 each plus shipping (price is subject to change and shipping is expensive due to weight).¹⁵

Mr. Sew Dandy¹⁶: <http://www.mrsewdandy.com>

Email: mrsewdandy@yahoo.com

Stitches in Time: <http://stores.ebay.com/Stitches-in-Time>

Email: stitchesintime@earthlink.net

Jan Sabin of **Mr. Sew Dandy** in Anacortes, WA, provides at no cost the service of lapping the wheels (slightly grinding out the wheel shaft hole to insure proper fit). This can be done by hand if necessary.¹⁷

The handwheel on electric model machines is solid instead of spoked. A skilled person can cut a notch in the solid handwheel to save the expense of purchasing a spoked one. The link in the section, [**Instructions for Converting**](#), provides tips on notching the solid handwheel.

Tuning Up a Vintage Machine

Most vintage machines need little more than a good cleaning and a tension adjustment to be ready for sewing but guides for doing basic repairs on some of the **Singer** models may be found at the link below:

http://www.tfsr.org/publications/technical_information/sewing_machine_manual/

An extension resource with very good tension balancing tips and general maintenance information is available at the link below:

http://cahe.nmsu.edu/pubs/_c/c-102.pdf

¹⁴ For a listing of trusted suppliers who may stock reproduction parts, check the **Treadle On Flea Market**:

<http://www.treadleon.net/fleamarket/ongoing.htm>

¹⁵ Cindy Peters, owner of **Stitches in Time**, reported the price is now \$12 each for a spoked wheel and crank.

¹⁶ Jan Sabin's site may be under construction. It may appear that it is no longer in existence but he assured me his is still supplying parts. Contact him by email for assistance.

¹⁷ Instructions for hand lapping wheels:

<http://www.treadleon.net/sewingmachineshop/lappingwheel/lappingwheels.html>

A threading guide for the **Singer** 99 (and bobbin winding instructions for the newer version) can be found at [SewUSA](#) (click to connect to the internet source).

A complete manual for the later model 99 is located at the link below:

<http://www.scribd.com/doc/5553830/Singer-1950s-Sewing-Machine-Manual-Class-9999K>

Additional assistance may be found on the **Vintage Singer** list at **Yahoo**:

<http://groups.yahoo.com/group/vintagesingers>

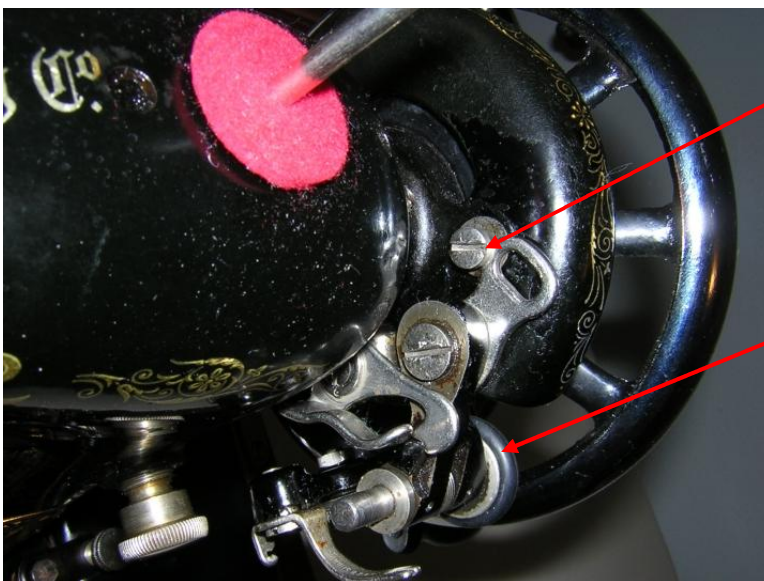
The sources for spoked wheels and hand cranks may also carry needed parts such as slide plates and tension dials. They may sell either new reproduction parts or usable pieces salvaged from donor machines in their collections.

Instructions for Converting

Instructions for attaching spoked wheels and mounting hand cranks are found at the link below:

<http://www.treadleon.net/sewingmachineshop/converting/converting.html>

Changing from a solid wheel to a spoked one may require adjustments to the bobbin winder as the rubber tire has to make contact in order for the bobbin to spin and fill with thread. The instructions show removing a piece of the slot that adjusts the bobbin winder on the older model 99s. These older 99s are identified by the cam style (interlocking gears) bobbin winder and the knob stitch length control on the column. It is unnecessary to make modifications to the winder mechanism if you unscrew the adjusting screw and rotate the entire mechanism forward so the slotted tab is placed all the way in front of the adjusting screw hole. Screw the adjusting screw back in with the slotted tab resting against it, then replace the usual fat bobbin winder tire with a skinny stretch version that can be found packaged with a stretch motor belt in most fabric stores with a large notions section. Both **Dritz** brand from **JoAnn's** and **Singer** brand from **Wal-Mart** were purchased for the two older models at the **Walla Walla Sew Green** activity at the Market. The **Wal-Mart** price was under one dollar per package.



Position slotted tab in front of adjusting screw

Replace bobbin tire with smaller stretch version



Bobbins

Singer 99s, 185Js, and 192s all require a class 66 bobbin. This style of bobbin is available in metal and plastic versions. A word of caution if one of these models is used; metal bobbins require a different tension adjustment than plastic bobbins, so it is expedient to use only one or the other. Test both the metal and plastic bobbins on the machines being used. The new metal bobbins have a 3 piece construction. The first batch of metal bobbins purchased had to be returned because the core cut the thread when the hook drew the thread under the bobbin to form a stitch. Reportedly, plastic bobbins have been warped or have little extra pieces of plastic making the bobbins stick in the case. The **Singer** brand from **Wal-Mart** (both plastic and metal) provided satisfactory performance. But, if available, the old original one piece class 66 metal bobbins are preferable. Either of the suppliers above can provide quality bobbins.



Presser Feet and Seam Guides

For ease of sewing, it is advisable to upgrade the presser foot on the machines. The standard version on the 99s, 185Js, 182s, and 128s will have a right toe that is very narrow. It would be preferable to fit all of the machines with a standard short shank foot with equal width toes for a generous $\frac{1}{4}$ to $\frac{3}{8}$ inch seam allowance. Either the straight stitch foot or the zigzag foot will work well.¹⁸ These feet will allow a thick refrigerator magnet to be butted up against the edge of the right toe for a seam guide. The width of the right toe will prevent the magnet from interfering with the motion of the feed dogs. For the Walla Walla **Sew Green** activity, the feet and ankles were "borrowed" from various standard low shank zigzag machines.



¹⁸ Standard short shank feet may be found hinged to the shank (ankle) or separate from the shank to be used with a clip on low shank. [Osage Sewing Center](#) sells a set that includes the clip on shank and zigzag foot plus a zipper foot for \$6.98 plus shipping. [JoAnn's](#) sells clip on feet. The [Inspira](#) brand $\frac{1}{4}$ " piecing foot is an option from [JoAnn's](#).

Wooden Machine Bases

You may find a machine head that has a badly damaged base or none at all. Although some models have four legs that make it possible to use them regardless, the additional support of a base will make them more stable and protect the working mechanisms on the underside of the machine. In addition to supporting the machine, a base may be designed to provide a storage area to keep bobbins and scissors handy when sewing. Instructions for making a simple base for a working machine may be found here:

<http://www.treadleon.net/woodshop/buildingbases/buildingbases.html>

Salvage parts from old cases for the new base. Things like hinge pins and “holding fingers” are generally usable. If there are no parts to salvage, purchase them from the recommended suppliers for spoked wheels and hand cranks.

To prevent the machine bases from sliding on slick table tops, gripper pads may be attached to the bottom of the base. The clear vinyl pads designed for the acrylic rotary cutting rulers will work, or you may purchase pads designed for furniture and table-top room décor items. These are available in stores like **Wal-Mart** in a variety of sizes. An alternate choice would be to use non-skid shelf liner under each base. Usually this type of shelf liner can be purchased in a roll from a “dollar” store and a segment can be cut to fit under each machine.

Bean Bag Instructions

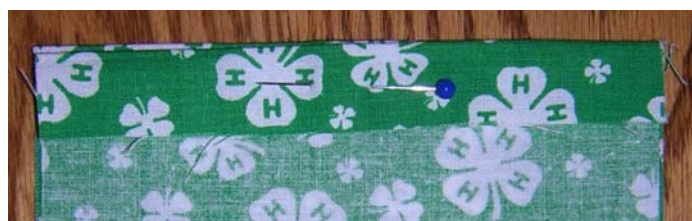


Fabric, Notions, and Supplies:

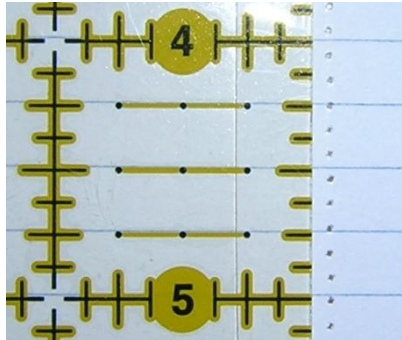
- ✿ Fabric purchased in 6 inch wide increments (6 inches, 12 inches, 18 inches, etc.) with youth appeal (4-H project related or college and team sports themes are good choices)
- ✿ All-purpose thread (match the fabric only if fabrics with a common tone are used)
- ✿ Bobbins filled with all-purpose thread (use the same thread as above)
- ✿ Long quilters' straight pins
- ✿ A pincushion for each machine
- ✿ Small short scissors on leashes, one pair at each machine
- ✿ Extra machine needles, size 80/12 or 90/14, universal or sharp points
- ✿ Beans, rice, wheat, or feed corn (not popping corn) for filler (@ 7 oz. per bag)
- ✿ A dish pan to hold the filler
- ✿ Small scoops or measuring cups to scoop filler into bags
- ✿ Sewing machines set up to sew a short stitch length, @10-12 stitches per inch
- ✿ Needle threaders (optional)
- ✿ One smiling volunteer at each machine

Pre-event Preparations:

1. Fold and press fabric in half with selvages matching, wrong side of fabric out (right sides together). Fold again, bringing fold to meet selvages.
2. Cut 6 inch wide strips the width of the fabric.
3. Trim selvages and cut 5 inch segments from each strip. Leave fabric in pairs right sides together. One 6 inch strip will yield about 4 pairs of rectangles 6 by 5 inches.
4. Along one 5 inch edge on each piece of fabric in the pair, fold over a generous 5/8 inch to the wrong side and press. This will be the top hem of the bag.

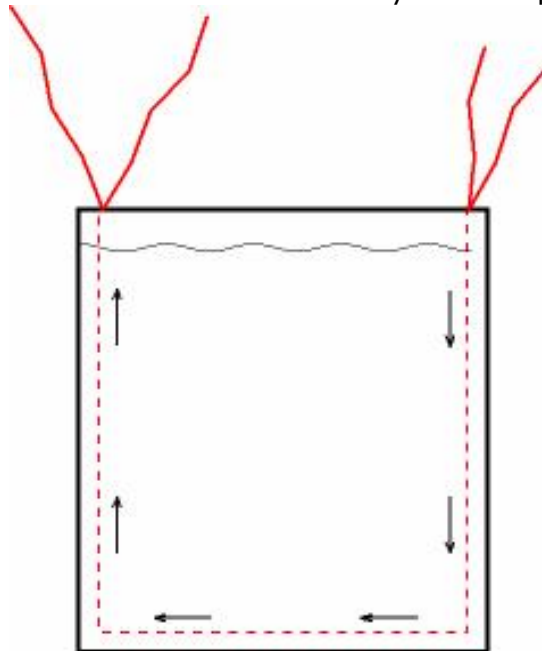


5. Pin pairs together in the hem allowance with a straight pin.
6. Plan about 11 pairs of blocks per machine per hour.
7. Pre-wind about two bobbins for each machine for each 4 hours of an event.
8. Set stitch length on machines at 10-12 per inch.



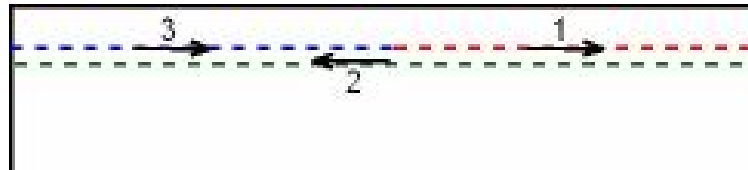
Sewing Instructions:

1. Start sewing at the top of a pair of squares, leaving a long thread tail while using the refrigerator magnet butted up against the edge of the presser foot as a seam guide.
2. Sew to the bottom of the bag, stop with the needle down about ¼ inch from the edge of the fabric, lift presser foot lever, and turn the fabric pairs.
3. Put presser foot lever down and continue sewing to the next side, repeating Step 2.
4. Put presser foot lever down and sew all the way to the top edge.



5. Check to see if the take up lever is at the highest point and then remove fabric pairs. Cut threads leaving long tails on the machine and on the fabric. This is important!
6. Turn bag right side out (do **NOT** trim corners before turning right side out).
7. Volunteer holds bag open while child scoops filler into the bag. The bag should be only 2/3 - ¾ full. A bag that is too full is difficult to stitch closed and it hurts if it hits a person or pet.

8. Using 3 or 4 long quilting straight pins, pin close to the filler so it will not migrate near the presser foot, impede sewing, or cause a broken needle (volunteers should pin because manipulating pins is very difficult for young fingers). Then place one pin to hold the two hem edges together.
9. Start sewing the bag closed in the middle of the hem edges using the refrigerator magnet as a seam guide. Stitch to the edge of the bag, put needle down, lift presser foot lever, and turn bag. Volunteers should watch to see that the child stops just before the edge of the bag with room to put the needle down in the fabric.



10. Put presser foot down, stitch to the opposite side, put needle down again, lift presser foot lever, and turn bag.
11. Stitch until the stitching meets or just crosses the starting point. Stop with the take up lever at the highest point. The bag will be stitched closed with a double line of stitching and no need for backstitching.
12. Remove bag from the machine. Leave long tails on the machine but trim all loose threads on the bean bag.
13. Clap and cheer! A completed bean bag is ready to take home or used to play a game at the bean bag target.

Additional Notes and Tips:

1. Catherine Eith recommends drawing a seam line on one side of the fabric pairs using a ½ inch seam allowance, an aid that may work well for some children. I, as well as another leader involved in the Walla Walla activity, would prefer not to teach the habit of watching a needle pierce the fabric when sewing. Instead the eye should be trained to follow the edge of the fabric moving along a seam guide or the edge the presser foot.
2. The bean bag has versatility used as a hot or cold pack. If feed corn, rice, wheat, or beans is used as filler, the bags can be safely heated in a microwave until warm or frozen in a freezer. Popping corn is not a safe choice for filler if the bag is to be heated.
3. If you are using **Singer** 99s, have the volunteers watch (or place their hand on the handwheel) to make sure the machines are cranked in the right direction. It pays to do this project as a team because the 99s do develop thread tangles if cranked in the wrong direction.
4. Develop a mantra for turning corners: "Needle down, lever up, and turn. Lever down, and sew."
5. You may find it easier to fill the bags with a funnel. Toilet paper tubes and plastic bottles with the bottoms removed are common and economical options.
6. If the child forgets to stop ¼ inch from the fabric edge for steps 2 and 4, have them continue to the fabric edge and then begin sewing at the edge, crossing

the previous line of stitching. The short stitches will be secured by the crossing of the seams and by leaving thread tails.

7. Trimming corners to remove bulk before turning the bag is not recommended because the additional fabric provides durability.
8. Some children will only want to crank the machine. Working as a team, the volunteer may guide the fabric.
9. Very small children may need to sit on a lap and have help turning the crank and guiding the fabric. This is a great way for the toddlers to participate who want to make a bean bag like older siblings.

Picture Guide to Suitable Models for Conversion

Singer 99

(Early model with cam style bobbin winder and knob stitch length control)



McKenna Linn

Singer 99 (newer model with stitch length lever)



Katie Farmer

Singer 128 (newer model with crinkle finish)



McKenna Linn

Singer 128 with an original hand crank



Katie Farmer

Singer 128 with an original hand crank



Kelly Pakes

Singer 28 in original case (tension dial is different from a 128)



Kate Dicey

Singer 185J



Katie Farmer

Singer Spartan 192



Katie Farmer

Japanese Clone of a Model 15



Katie Farmer

Japanese Clone (New Home Brand)



Di in Tennessee

Japanese Clone with Slide Decals Attached



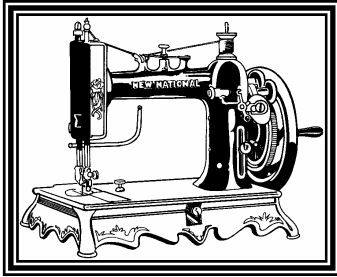
Di in Tennessee

Japanese Clone



Di in Tennessee

Go Green! Sew Green In 4-H



Sponsored by 4-H Leaders:

Sally Walter of **Sew Wonderful Cooks**
Offering special programs and classes for 4-H

- ✿ Quilting Day Camp
- ✿ Super Saturday Classes
- ✿ State and District 4-H Forum
- ✿ Teen Conference
- ✿ 4-H Clothing and Textiles Judging Contest
- ✿ Sewing Machine Service and Minor Repairs

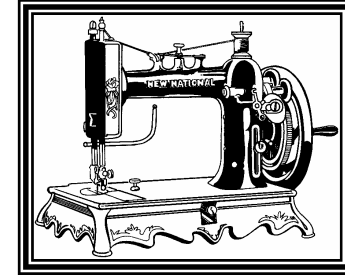
Shirl Phillips of **Sew Krafty Kids**
General Club Leader in Sewing

- ✿ Personalized Sewing Instruction for 4-H members
- ✿ Sewing Machine Service and Minor Repairs



No current openings in either club
Sally Walter 529-7447
<http://sewwonderful.blogspot.com/>
Shirl Phillips 525-8129

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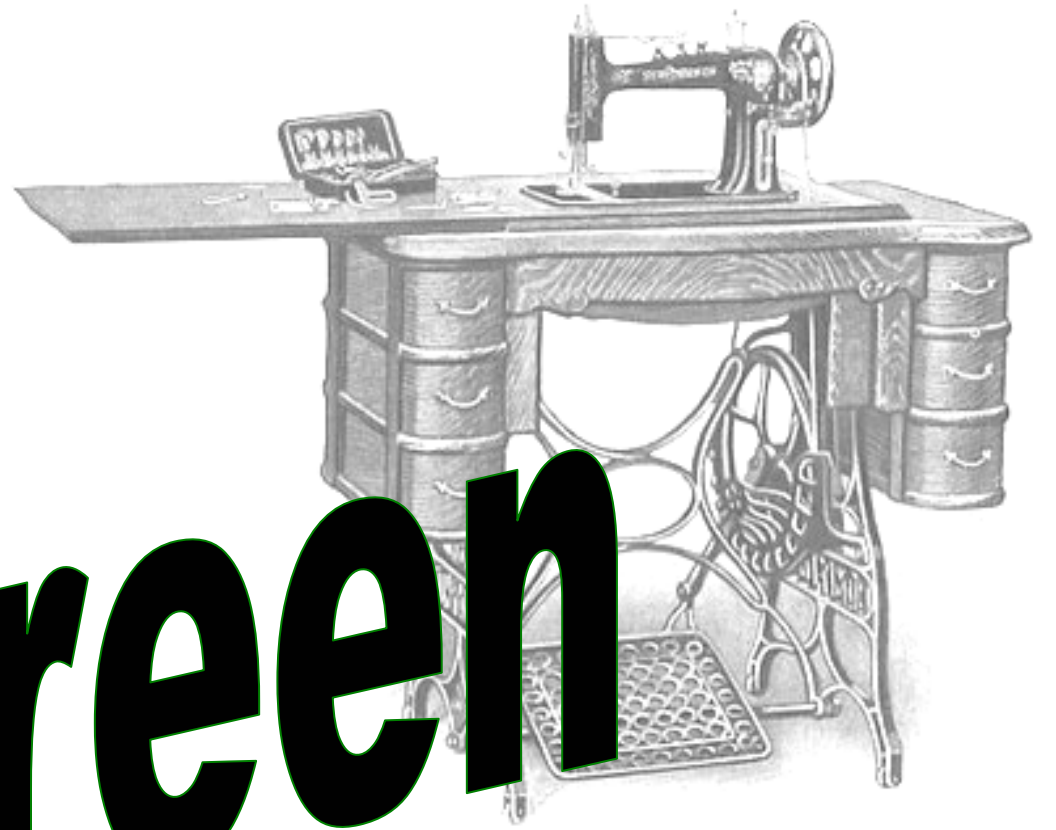
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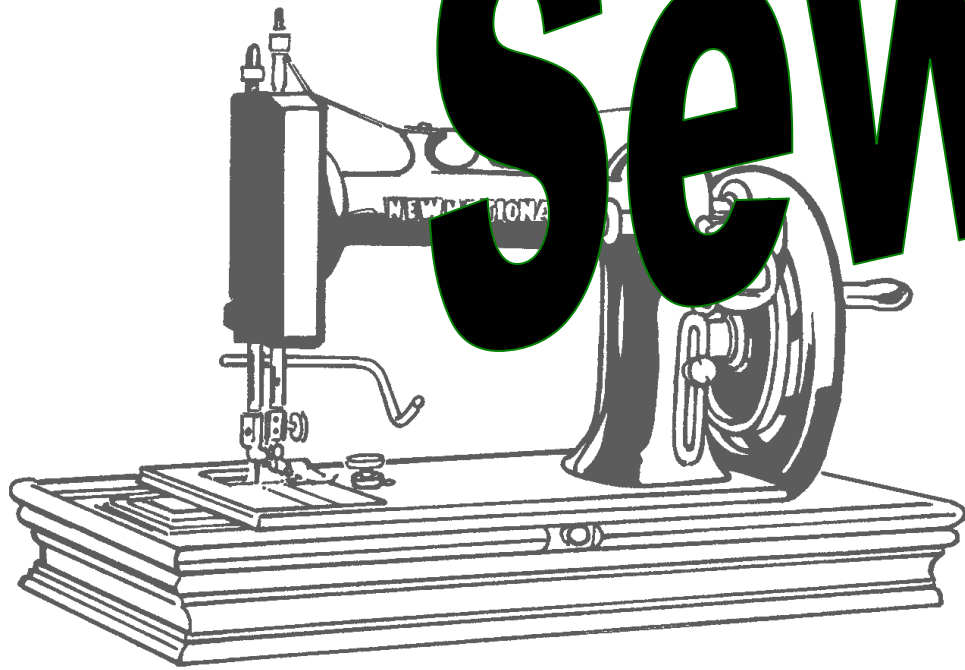


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Go Green!



Sew Green



In 4-H