

DIY Wrap Skirts

Leader Guide



Fashion
through science

WITH THIS ACTIVITY

- Handout (either Radius Method or Slat/Strip Method)

MODULE



We are
Engineers!



Movement
Improvement



Marvelous
Materials



Smart
Clothing



Patternmaking
Tools n' Tech

Big Picture

Young designers create wrap-skirts by turning a 2D pattern into a 3D garment.

What's the goal?

Designers understand the relationship between the amount of flare added to the skirt and how the skirt drapes on the body. They will draft a simple pattern from scratch and use a sewing machine. Through the drafting process designers will learn some basics of how the shape of a pattern (2D shape) affects the look of the skirt (3D object).

Preparation

1. Individuals will complete their own projects, but work in pairs to help each other. Pair more experienced designers with those with less experience.
2. Pre-cut fabric into 2 yard lengths.

Materials

What they need: (per person)

- Fabric (45" or wider), 2 yard length (see Tips for making longer skirts)
- Ribbon or bias tape (see Tips for amount)
- Thread of color to match skirt fabric
- 18" transparent ruler
- Tape measure
- Scissors
- Pencil
- White chalk, or disappearing fabric marker
- String
- Embellishment items (fabric markers, fancy ribbon, rick rack, buttons, etc.)
- Pins

What you need: (per leader)

- Extra supplies to help
- Scissors
- Iron, ironing board, and press cloth

Shared Supplies:

- Meter or yard sticks
- Sewing machines tested and threaded (make sure you have wound bobbins)
- Serger (optional)

Prep Time: 30 Minutes
Activity Time: 2.5 Hours
Difficulty: Level 2



Let's get started!

We will draft and sew a flared wrap skirt to understand how flat pieces of fabric can be sewn to make a 3D garment.

Radius Method Instructions

1. Measure around the waist with a measuring tape. Add 10-12" to this measurement for the wrap overlay of the skirt. Write the total length down.
2. Measure down from the waist for the desired skirt length. Write this number down. Have designers check the length with the table of suggested skirt lengths on the handout. If someone wants their skirt so long that it ends up longer than the width of the fabric, you will need to sew pieces together to make the fabric wide enough. See instructions in the TIPS section below.
3. Have the young designers fold their fabric in half lengthwise to find the middle, put a pin in this spot on the selvage, and then spread the fabric on the table in a single layer.

VOCABULARY

Selvage (selvedge): the finished edge on woven fabric produced during manufacture that prevents it from unraveling.

4. They are going to draw the skirt waist shape onto the fabric. To do so, they need to know the **radius** for the **circumference** of a circle made using the waist measurement plus the 10-12" overlap (step 1). They can calculate the radius using the formula:

$$C / 2\pi = \text{radius}$$

where:

C is the **circumference** of the circle (waist plus overlay)

π is **Pi**, approximately 3.142

VOCABULARY

Circumference: the distance around the outer edge of a circle

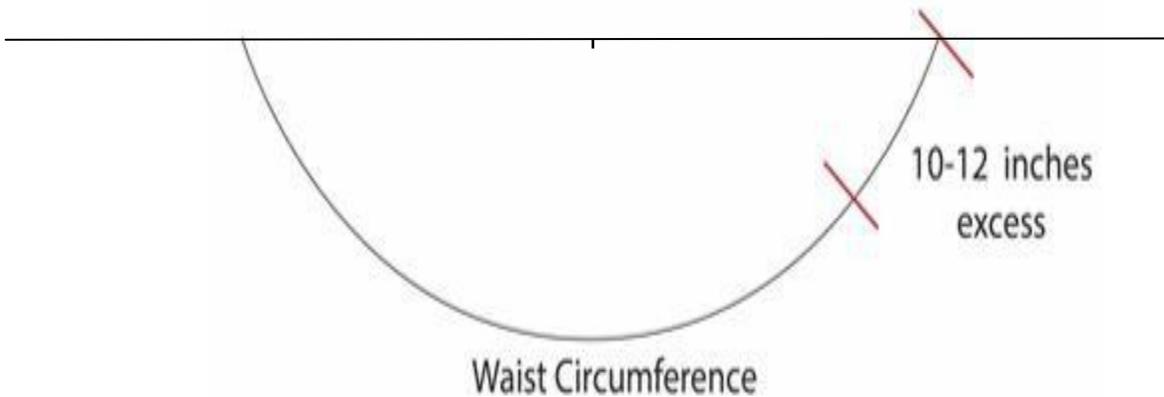
Radius: a straight line from the center to the circumference of a circle

They can also look it up on the chart below!

Find the waist measurement on the left, and look for the radius in the last column.

Radius Measurements

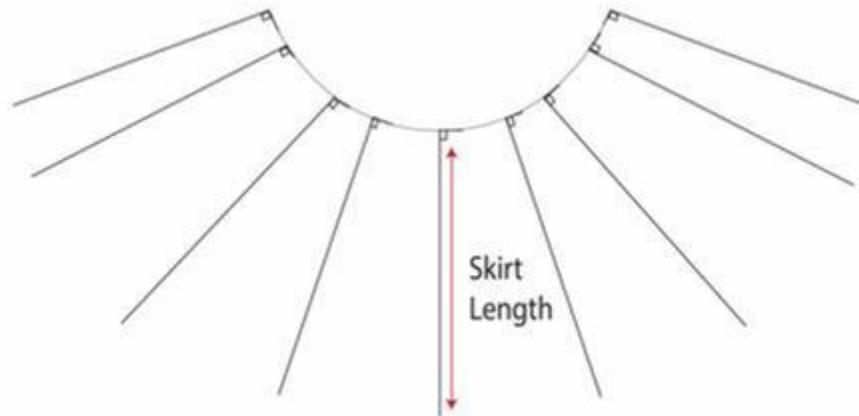
Waist Measurement (inches)	Waist Measurement + 11 inches	Radius Rounded to Nearest ¼ inch
16	27	4.25
17	28	4.5
18	29	4.5
19	30	4.75
20	31	5
21	32	5
22	33	5.25
23	34	5.5
24	35	5.5
25	36	5.75
26	37	6
27	38	6
28	39	6.25
29	40	6.5
30	41	6.5
31	42	6.75
32	43	6.75
33	44	7



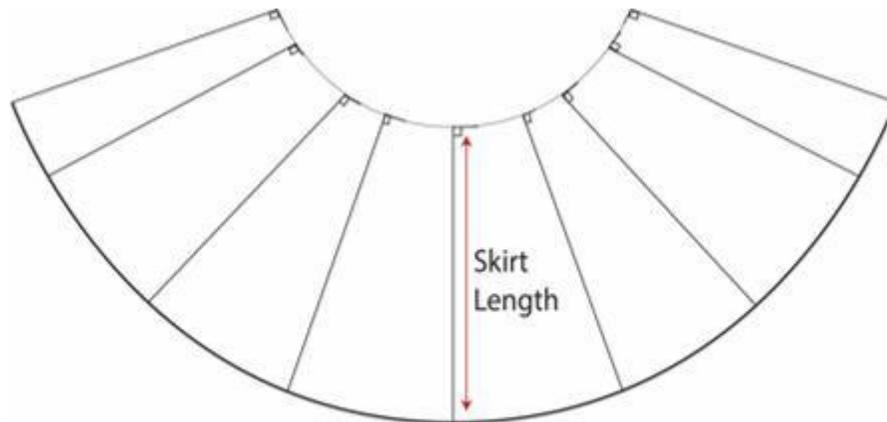
5. Tie one end of a piece of string to a piece of chalk. Measure the length of the radius on the string starting from the chalk and put a knot at this spot. Align the knot with the center mark on the selvedge of your fabric. With the string pulled tight, rotate it and draw a smooth curve on the fabric with the chalk (see above).
6. Now mark radiating lines **perpendicular** to the waist curve (place the end of a yardstick flat along the waist curve to be sure to be perpendicular). The length of the lines should be the skirt length measurement determined in step 2. See the image below. Minimize chalk marks on the face of the fabric by either drawing on the wrong side, or by marking only the end point of each perpendicular line rather than drawing the full line.

VOCABULARY

Perpendicular: a straight line at an angle of 90° to a given line, plane, or surface.



7. Join the ends of the radiating lines to form a smooth curve, completing the outline of the skirt. See image below.



8. Following the chalk lines, cut out the flared skirt.
9. Measure ribbon or bias tape for the waistband by wrapping it around your waist twice, and add enough to tie a bow (or 3x the waist measurement).
10. Pin the bias tape or ribbon to the skirt waistline, starting by matching the centers of the fabric and the ribbon, and working your way to the sides.
11. Sew the bias tape or ribbon to the waistline, removing the pins along the way.

12. Sew a straight stitch, zig-zag stitch, or serge along the raw edges of the skirt so it does not fray.
13. The skirt is now ready to wear and personalize with ribbons, buttons, fabric markers OR make it light up by applying LED lights, to turn it into wearable electronic art!

Strip/Slat Method Instructions

1. Give each girl a strip of 2"-wide poster board approximately 45-52" long (tape strips to achieve this length). Have the young designers wrap the slat or poster board strip around the waist and mark the measurement. Then have them add 10" to 12" to this measurement, cut the slat or strip to this length, and mark the center point.
2. To use a strip, align the center with the center point of the fabric marked on the selvage. One young designer should hold the strip in a curved shape on either side of the center point, while a partner draws along the curve with chalk.
3. Skirt length may be measured using the cardboard strip also. Fold the strip at the length mark and use the strip to mark the perpendicular lines (or end points).
4. Ribbon for the waist may be measured using the strip folded to the waist measurement. Cut three times that length.
5. Continue skirt as for Radius Method.

Tips:

- Save table space by drafting skirts on folded fabric. Spread the fabric open and fold it in half lengthwise. Pin the layers together in a few spots along the selvages. Fold the waistband strip in half. Place one end of the folded strip on the fabric fold down some inches (this is the bottom of the curve arc) and the other on the selvage edge, shaping the curve as desired.

- Use easy to sew medium weight fabric for beginners, such as cotton/polyester broadcloth. It will be easier to see markings on solid colors.
- We recommend ribbon 1.5-2" wide, it makes a nice big bow!
- If a full circle skirt is preferred or if a floor-length skirt is preferred (or necessary for religious purposes), you may use a twin flat sheet or sew extra panels to the fabric to make it wide enough. Prepare this the day before.

Discussion Question:

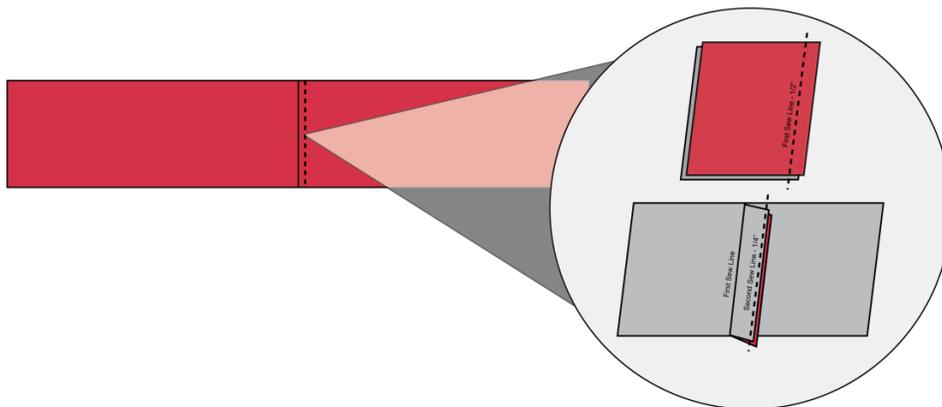
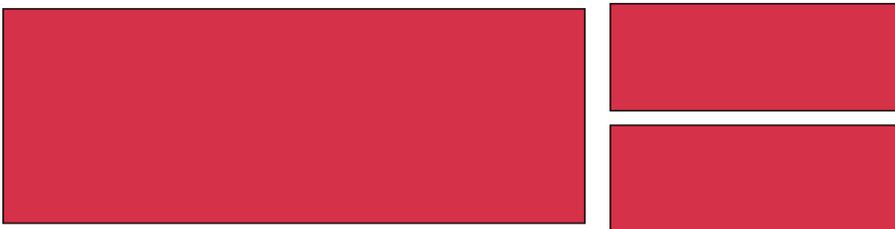
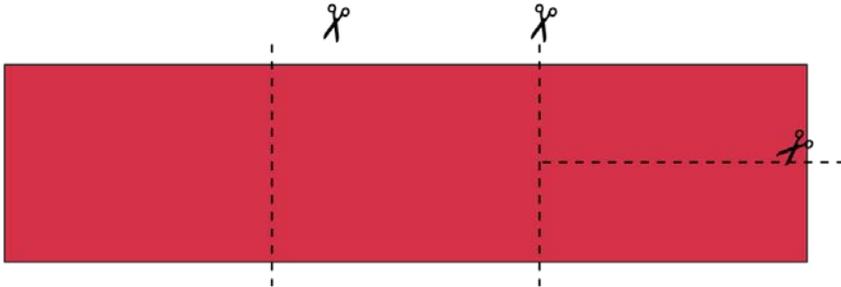
- When drafting the skirt, consider how the shape of the waist curve will affect the fullness of the skirt. Will the skirt flare more or less if you make the waistline a tighter curve? What will happen if the curve is less tight? What if the waistline is a full circle?

Answer: the tighter the curve, the more fullness the skirt will have. If you want a really full skirt, shape the waistline so that it is closer to a circle. If you only want a little bit of flare, flatten the waistline curve. A direct relationship exists between the shape of the waistline and the flare of the skirt: more curve = more flare.

Take it further:

- Add LEDs (see: Illuminating Fashion: Skirts)
- Add an LED applique by hand or by machine (see: Illuminating Fashion: Applique)

Instructor Extra – How to Prepare the Fabric for a Floor-Length Skirt:



- For a skirt 40” long with a 30” waist, you will need 4-1/2 yards of fabric. Cut off 1/3 of the fabric (54”), and cut that piece in half lengthwise.
- Pin the cut pieces end to end with the selvages on the same side. Sew, press seam to one side, and topstitch. Pin this long strip to the main fabric panel matching the selvages. Sew, press seam to one side, and topstitch. Now the fabric is wide enough for a long skirt.

