IN THE FOLDS OF FASHION

By

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Madelynn Archer
April 23, 2014

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Abstract

The relationship between fashion and paper has always been strong. Paper is used to create sketches and patterns for new fashion ideas, which are photographed and printed in paper magazines when completed. In the past, paper has also been used as a medium for creating the final garments. This fad was especially popular in the late 1960s, although it was also present as early as the 1700s. The main focus of this project is to demonstrate the creative and enduring relationship between paper and fashion. To show this, I created eleven outfits in a cohesive collection in which some pieces are created entirely from paper or entirely from fabric, in addition to garments which are a mixture of both. The pieces use techniques from typical processes of garment production, as well as origami techniques, which are included as a nod to one of the traditional methods of manipulating paper.

In the Folds of Fashion

The relationship between fashion and paper has always been a strong one. When starting to create a garment, designers will often sketch their ideas onto a piece of paper. The ideas become paper patterns, which are used to create the final forms of the clothing. When the garments are completed, they can be shown in fashion magazines, which are commonly printed on paper.

The eleven outfits in this collection are designed to show the enduring relationship between paper and fashion. Some pieces are created entirely from paper, some are created entirely from fabric, and some are a mixture of both. The pieces use methods from typical garment production processes and origami techniques. This collection of garments is created in half-scale of a size eight fashion form and is inspired by the creatures and corals that make up the ecosystems and structures of coral reefs. Each final garment is displayed in this book, as well as the production flats and swatches of the fabrics and papers used to make it.

Creating this collection required problem-solving and research in order to complete the garments in a successful manner. What follows is a summary of the literature that was reviewed to provide background for the project. In addition to research on the history of both paper fashion and origami, exploration was required to find successful methods of integrating the paper and origami pieces into the garment making process. Much of this research was trial and error, which required significant thought and creativity to find solutions. This created a deeper understanding of the process of working with paper and the limitations and possibilities that it offers.

Review of Literature

Although not very common in the current day, paper can be used as the final fabric of a garment. Paper clothing and accessories were used as early as the 1700s, mostly as masquerade outfits, but they were created as unique pieces to be worn only once (Steele, 2005). However, in the late 1960's, mass produced paper clothing became a short-lived, but successful, trend. A-line shift dresses, jump suits, evening gowns, men's vests, and other garments were made of specially blended papers, such as Dura-Weve, Ree-May, Webril, and Kaycel (Real Live, 1967). These garments were durable enough to be worn several times, and some companies advertised their paper clothing could be washed and ironed (Paper Capers, 1966; Real Live, 1967). Companies such as Joseph Magnin Co. opened multiple stores to sell paper clothing after seeing the success of the original paper shift dresses, which were produced as a gimmick by the Scott Paper Co. in 1966 (Real Live, 1967). Even companies such as Hallmark Cards were involved with the trend, creating matching cups and plates along with dresses, so that an entire party setup could match the hostess (Real Live, 1967). Paper clothing was printed with bright colors and patterns, including many pop art patterns like the *Souper Dress* that was covered in Andy Warhol's *Campell's Soup Cans* (Zēdianakēs, 2007). Companies believed that when paper clothing had been in production for three years, they would be making profits in the hundreds of millions of dollars (Real Live, 1967). However, the trend ended by 1968, only two years after its start, due to the easily torn and creased nature of paper clothing, as well as the prevalence of the hippie movement's ideals of conservation as opposed to disposable consumerism (History of 1960s, n.d.).

Although no longer popular in the consumer market, modern day artists still create paper clothing both for wear and for display. Polly Verity is a UK based artist who creates avant garde clothing from folded paper (Rutzky & Palmer, 2011). Isabella de Borchgrave is an artist from Belgium who works with paper to create beautiful garments that are replicas of popular styles from the past. Using wetting techniques she keeps secret, de Borchgrave has created clothing for museums around the world that look like the styles of 19th century Venice, Elizabethan England, and even classic Coco Chanel designs (Borchgrave, n.d.). In 2013, Lady Gaga wore a dress to an interview at Good Morning America that was created by Mathieu Mirano from an unidentified type of specially made paper. Her accessories, including her gloves and undergarments, were also made from this special paper which was very durable and would not dissolve if it got damp (Lady Gaga, 2013). In addition to the clothing produced as art pieces, paper clothing is still in use in work environments, such as hospitals and doctor's offices, where the dressing gowns given to patients are often made of paper.

The art of origami is a common method of manipulating paper. Origami started in Japan around 600 A.D. when Chinese methods of paper making were introduced by a Buddhist priest (Alexander, 2012). Originally, origami was used only for religious purposes because of the high cost of paper (Folding Paper, n.d.). For many years, origami models were limited and the art was considered to be nothing more than a pastime for children (Fox, 2005). Thanks to Akira Yoshizawa's work in creating notations for origami folds as well as creating new folding techniques, the possibilities expanded greatly and there are now well over 50,000 patterns, with more being created every day (Folding Paper, n.d.). Every piece of

origami is based on the application of two basic folds, the mountain and valley folds, interacting in various ways to create common shapes and recognized fold sets, but the end results can be as creative and varied as the artists themselves. Although paper is the most commonly used medium for origami, some origami can also be created using fabric. David Rodriguez, a New York based fashion designer, uses tessellations and folded flowers as decorative elements in his designs. He uses a wide range of fabrics, including leather, satin, and wool. Pleated garments, such as the Delphos gown by Mariano Fortuny that was created in 1907, also display an element of origami, through a series of simple alternating mountain and valley folds (Rutzky & Palmer, 2011).

Garment Design Process

In creating my collection of garments, I used techniques that came from both fashion design principles and origami folding. Through the use of pleating, tessellations, and abstract models, I incorporated elements of origami into the garments. I mimicked their effect by using smocking in one of the skirts that is made of fabric. I manipulated darts and pleats to create the looks I wanted, and made use of both draping and flat pattern skills. The garments make use of several techniques for finishing the inside, including bias tape and lining. Some garments have interfacing, helping to reinforce the fabric, making it stronger and sometimes stiffer.

A variety of colors and textures were used in this collection, and the fabrics and papers vary greatly in their qualities and characteristics. I made use of knit fabrics, as well as woven fabrics, which require different considerations when creating the patterns. The papers vary from see-thru to very thick and each presents its own difficulties. The see-thru paper

required me to minimize seams because they would be easily visible. I also had to alter ideas for garments because of the need for sufficient coverage underneath the see-thru layer. The thicker paper was challenging because of its stiff quality. Heavy weight paper did not hold creases very well. However, once the paper was coaxed to hold the crease, the paper held its shape better than the lighter weight papers.

I used both paper and fabric in the garments to extend the relationship between the two mediums. My collection is inspired by the shapes and colors that can be found in coral reefs and the creatures that live within the reefs. Each garment displays an understanding of how to construct clothing, whether it is in fabric, paper, or a mix of the two. Throughout the process, I gained a greater understanding of how the two mediums are both similar and different, and the possibilities and qualities that they offer.

The Collection

My first outfit, Trygonus, is inspired by the stingrays living in and near the coral reefs, as well as the motion of their fins while they swim. The cardigan is turquoise, which is indicative of the water in the shaded sections of the reef near the sandy bottom where stingrays live. The sleeves are pulled back in curves that mimic the movement of a stingray. The romper underneath is made of a gold paper that has a circular reflective pattern. The pattern reflects a multitude of colors, much like a fish's scales would while swimming through a coral reef.



*Figure 1.*Trygonus romper front view



*Figure 2.*Trygonus side view



Figure 3.Trygonus back view

The second outfit in my collection, Carapace, consists of high-waisted pants and a fitted shirt. The shirt has flared elbow length sleeves and is made of a lightweight knit fabric. The pants are made of paper and vinyl and have a back zipper. The pants were made of paper that was folded by hand into a hexagonal tessellation (Gjerde, 2009). The tessellation was created before cutting out the patterns in order to make the origami a surface embellishment, much like a printed fabric would be, rather than a structural element. The pattern is reminiscent of sea turtle shells, like those that live in and around coral reefs.

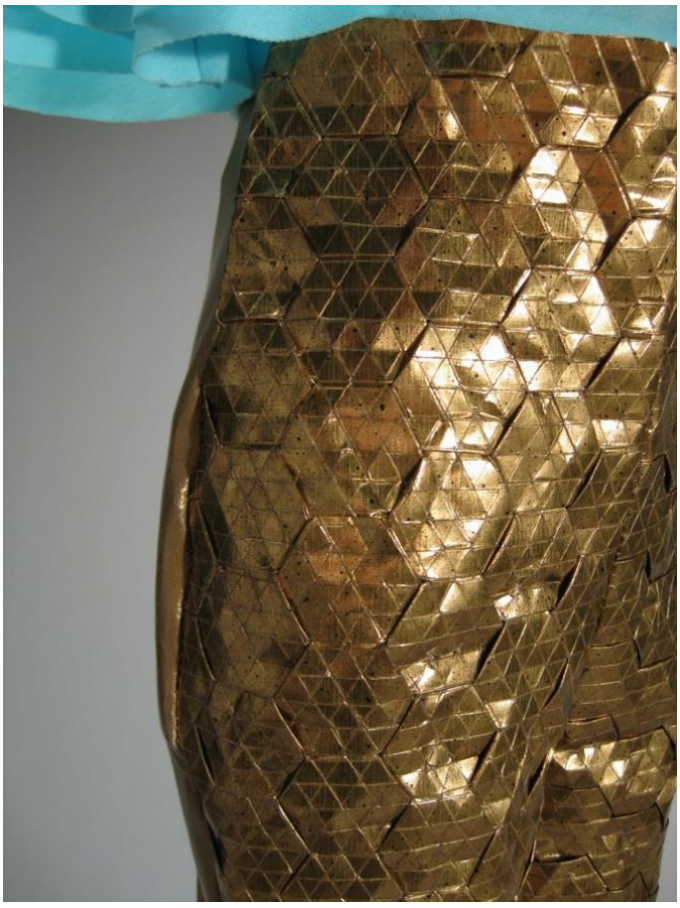

Figure 4. Carapace detail



Figure 5.Carapace front view



*Figure 6.*Carapace three quarter view

My third outfit, Rippled, is a bandeau top with pleated paper attached to the front to create a corset-like appearance. The jagged shape created by the pleating gives an overall look to the top that is suggestive of a fish's fins. The skirt is made of a shiny fabric that has been smocked by hand in a triangular pattern (Carragher, 2014). The smocking was done after the pattern was cut out in order to make it a structural element of the skirt. The fabric itself looks as if it has scales like a fish, and the couching makes the fabric have permanent water-like ripples.



Figure 7. Rippled detail



Figure 8. Rippled front view



*Figure 9.*Rippled three quarter view

My fourth outfit, Gorgonia, is a strapless dress with a skirt made out of four different layers, and a hand-beaded bodice made of fabric. The bottom layer of the skirt is made from a stiff fabric. The three layers above it are removable and made of paper. The skirt has varying amounts of pleats on each layer, with the amount on the top layer being reminiscent of the pleating on Fortuny's Delphos gown. Several sizes and types of beads were used on the bodice, including seed beads and bugle beads. The mix of beads created a unique look that evokes the image of coral reefs.



Figure 10. Gorgonia detail



Figure 11.Gorgonia front view



Figure 12.Gorgonia three quarter view

The fifth outfit, Wakes, consists of a cropped shirt made of striped fabric, with gathering and dart manipulation that mimics the motion of the water as creatures swim through it. The skirt has two layers, a fabric underskirt and a sheer paper overskirt. The top layer of the skirt is pleated, and ends slightly below the knees. The skirt closes with a side zipper, and the shirt has a separating zipper in the back.



*Figure 13.*Wakes detail



*Figure 14.*Wakes front view



*Figure 15.*Wakes three quarter view

The sixth outfit in my collection, Belled, is a dress that flares out at the hips, forming a shape suggestive of the body of a jellyfish. It is shaped using princess seams that have been manipulated to add volume. The dress has been color blocked with two different silver papers to show the varying colors of the jellyfish as they move through the water.



*Figure 16.*Belled front view



Figure 17.Belled three quarter view

The seventh outfit, Fanned Out, is made by pairing a fitted shirt with a layered short skirt. The shirt has darts radiating from the neck in order to control the fit and has stiff ruffles on the sleeve hems. The skirt was created by sewing shaped paper pieces in several layers onto an A-line fabric underskirt. The paper pieces are shaped to create a pattern similar to some types of shelf coral that form reefs.



Figure 18. Fanned Out front view



*Figure 19.*Fanned Out three quarter view

My eighth outfit, Mollusca, is reminiscent of the 1960's style tent dress which was the origin of the paper fashion trend. The dress has origami structures sewn to the shoulders and the front of the dress that resemble the mollusks living on coral reefs. The origami shapes are an original design, and the crease pattern is included in the appendix.



Figure 20.Mollusca detail



Figure 21.Mollusca front view



Figure 22.Mollusca three quarter view

The ninth outfit in my collection, Anemone, is a knit sleeveless shirt and pair of pants. The pants have been slimmed to the ankles and are made out of a combination of paper and a medium weight fabric. The shirt has several shaped panels inserted into it that resemble anemone tentacles. These panels are a replacement for the darts that typically shape the bodice of a garment.



Figure 23. Anemone detail



Figure 24. Anemone front view

My tenth outfit, Viceroy, is a black silk dress paired with a gold cardigan that has origami tessellations on the shoulders. The tessellations are made of a heavyweight gold colored paper and shape themselves into winged points during the folding process. The structures are a similar shape to that of the sharks who feed in the coral reefs. The bodice of the dress is a halter top attached to a circle skirt.



Figure 25.Viceroy detail



*Figure 26.*Viceroy dress front view



Figure 27. Viceroy dress side view



*Figure 28.*Viceroy front view



*Figure 29.*Viceroy three quarter view

The eleventh outfit, Wavelets, is a casual look with cuffed shorts and a sleeveless shirt. The shirt has a backwards facing roll collar made of silk. The main part of the garment is made of paper, which has been crumpled to create a texture that is like the surface of the ocean. The shorts are gathered into the waistband and have cuffs on the legs. They are made of a knit fabric which has been layered under chiffon. The shorts close with a back zipper.



Figure 30.Wavelets front view



Figure 31. Wavelets back view

Conclusion

Sewing with paper presented several challenges that required thought and creativity in order to make the sewing process effective. Traditionally, while attaching patterns to the fabric and while sewing two pieces of fabric together, the pieces are held in place with pins. However, the use of pins while working with paper would have left holes in the garments that could not have been repaired. The use of paperclips in place of the pins was generally successful.

Due to the unforgiving nature of paper, some forms of clothing cannot be produced. For example, paper cannot be used to create a circle skirt that attaches to a waistband or a bodice because the process of attaching the two together requires the paper to stretch. To solve the problem of working with paper when stretch was required, several outfits needed multiple test garments. Some garments had to be altered after testing. For example, the circle skirt had to be created out of fabric instead of its original paper, and the layered paper skirts were made detachable so that they did not need to stretch into place.

Overcoming these challenges created valuable experience and insight into the potential uses of paper as a fashion element. The process of working with paper can be time consuming, and precautions must be taken in order to limit its opportunities to rip or wrinkle. However, paper can provide certain qualities to a garment that could be desirable, such as stiffness and sharp folds. In the future, when working with paper as a part of fashion design, the understanding gained from this collection will be beneficial to creating improvements in the techniques used.

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Appendix

Line Sheets

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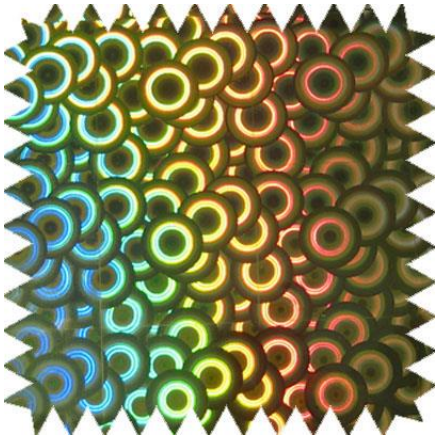
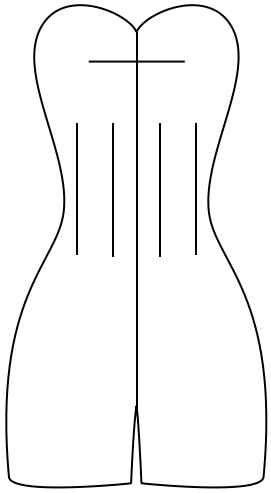
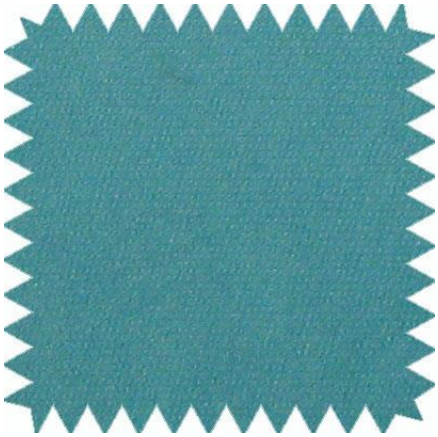
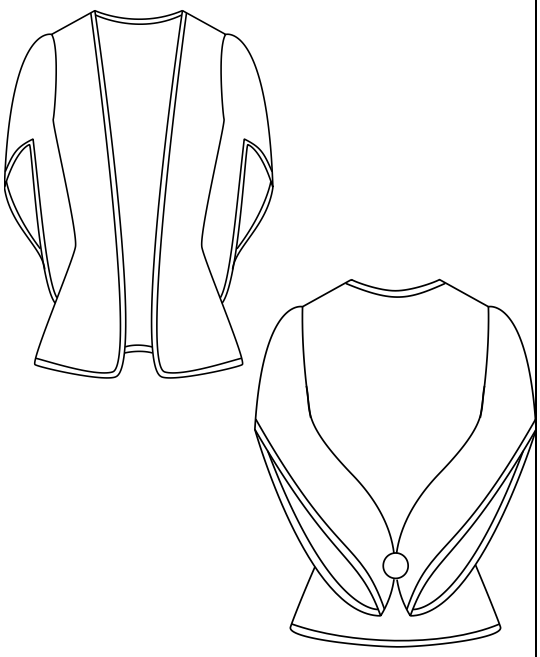
<tr><td></td><td>Metallic Paper</td><td></td></tr>
<tr><td rowspan="2"></td><td rowspan="2">100% Cotton</td><td>Style 2003-02, Jacket</td></tr>
<tr><td></td></tr>
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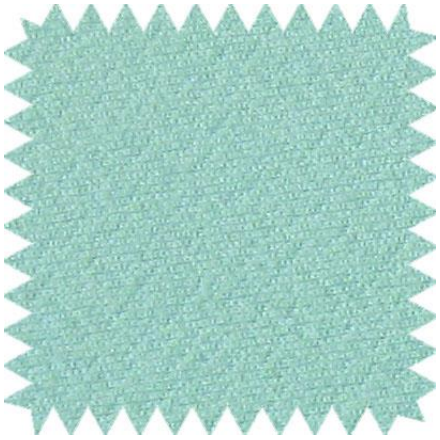
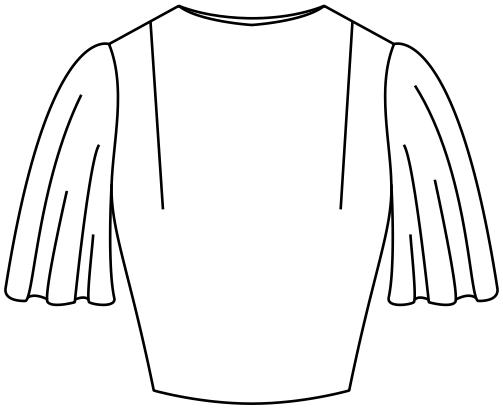
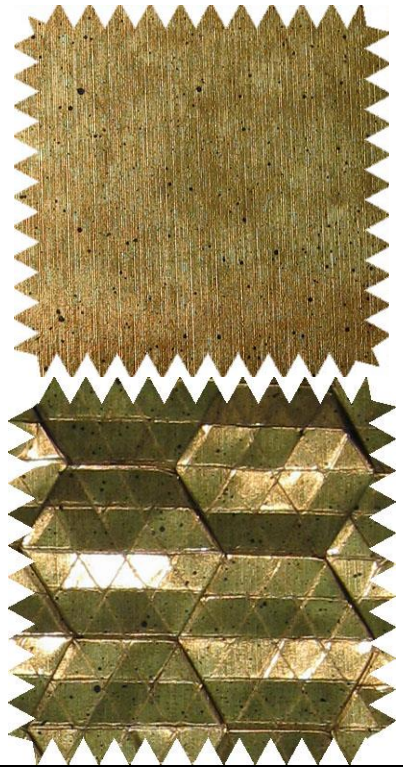
<tr><td></td><td>100%
Polyester</td><td></td></tr>
<tr><td rowspan="2"></td><td rowspan="2">Metallic
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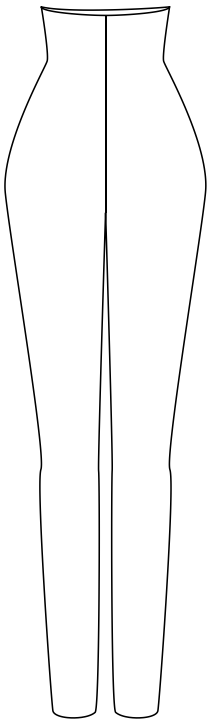
<tr><td></td></tr>
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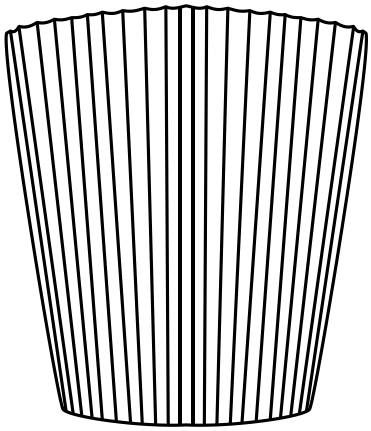
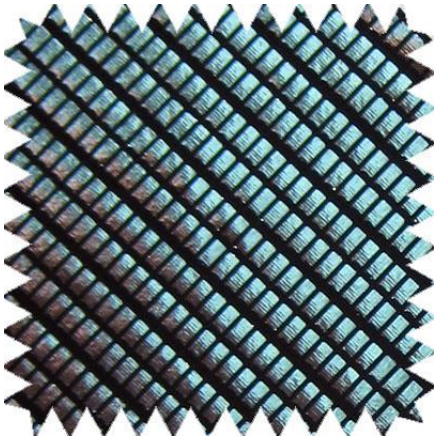
<tr><td></td><td>Paper</td><td></td></tr>
<tr><td rowspan="2"></td><td rowspan="2">100%
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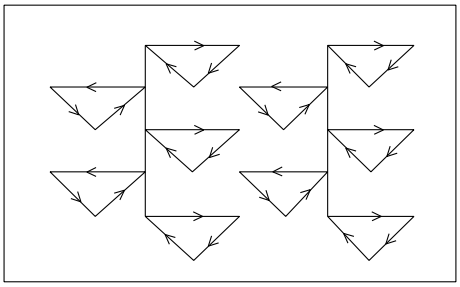
<tr><td></td></tr>
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Gorgonia

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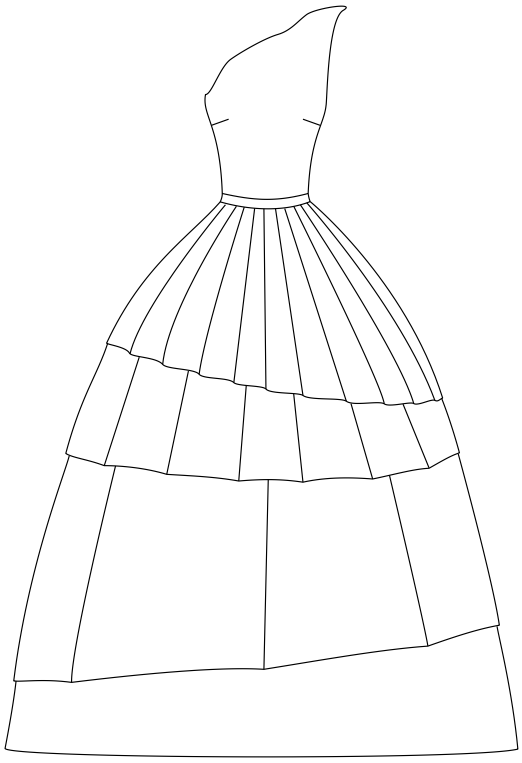
	100% Silk	
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	Metallic Paper	
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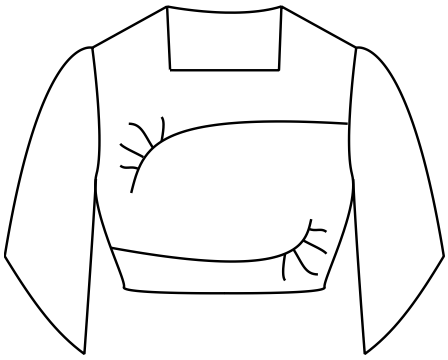
Polyester</td><td></td></tr>
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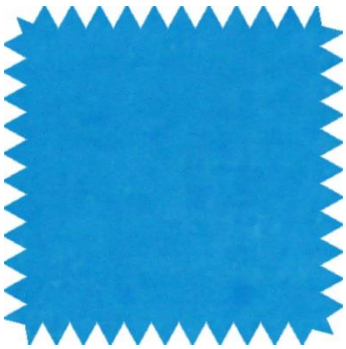
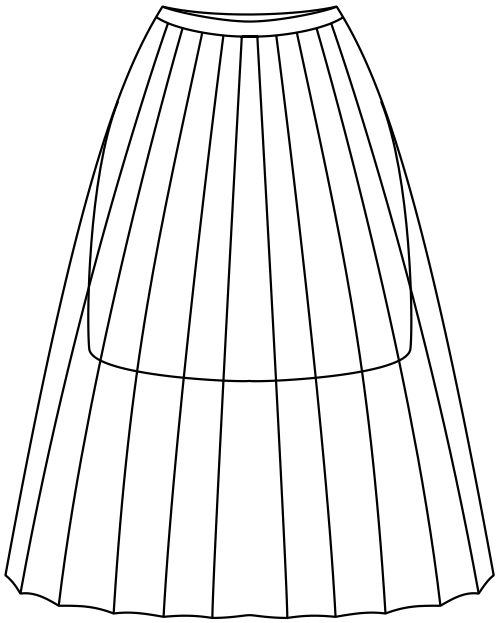
<tr><td></td><td>100%
Polyurethane</td><td></td></tr>
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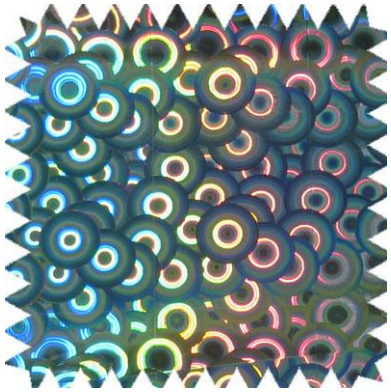
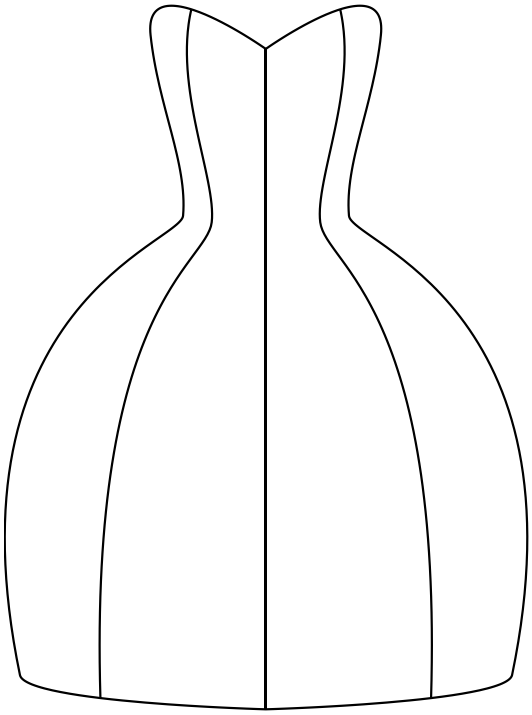
<tr><td></td><td>Metallic Paper</td><td rowspan="2"></td></tr>
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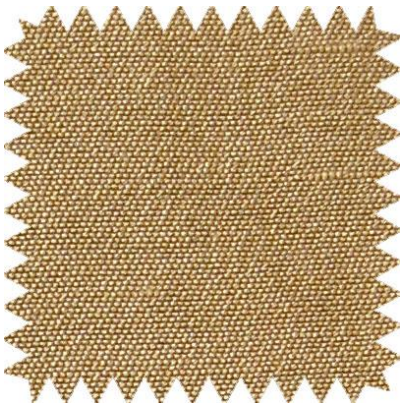
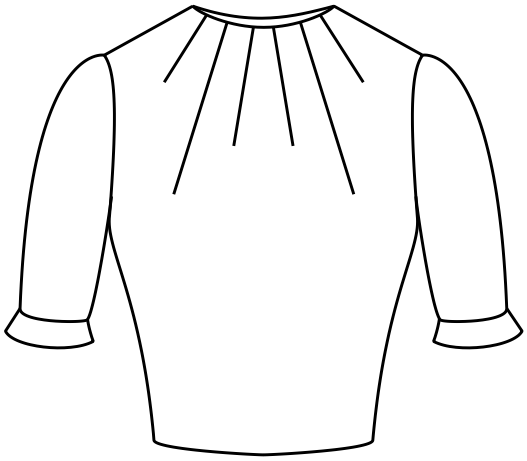
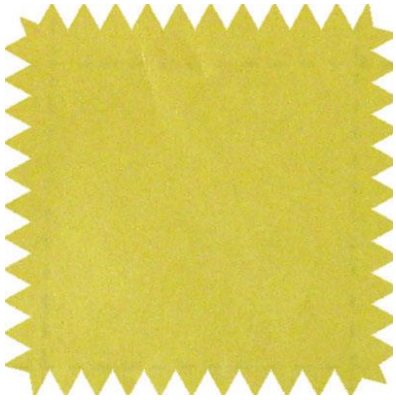
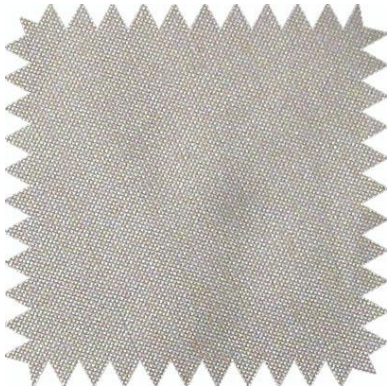
<tr><td></td><td>100%
Cotton</td><td rowspan="2"></td></tr>
<tr><td></td><td rowspan="2">Paper</td></tr>
<tr><td></td><td rowspan="2">100%
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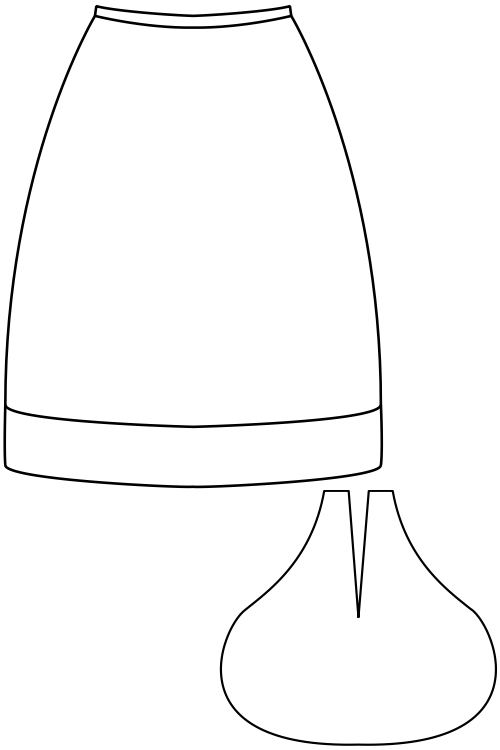</td></tr>
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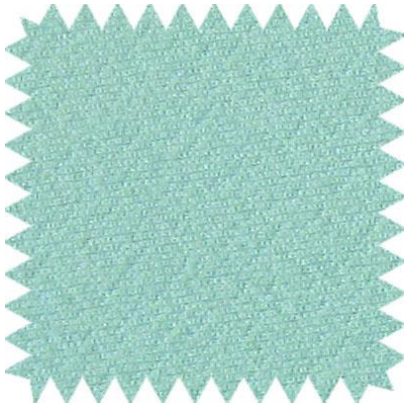
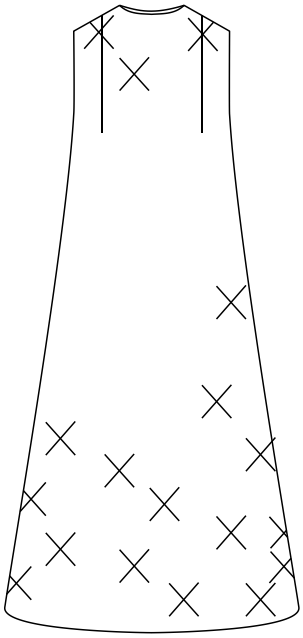
<tr><td></td><td>100%
Polyester</td><td></td></tr>
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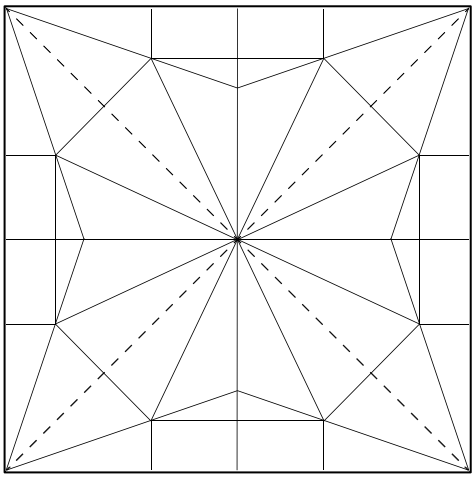
<tr><td></td><td></td></tr>
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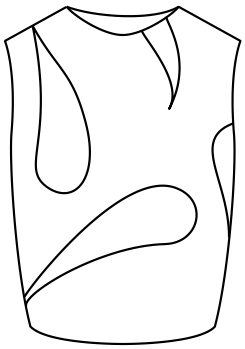
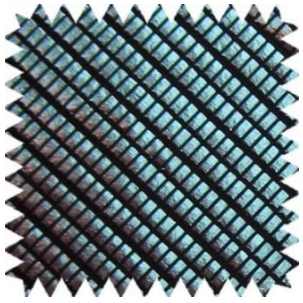
<tr><td></td><td>100% Cotton</td><td rowspan="2"></td></tr>
<tr><td></td><td>100%
Acetate
&
Polyurethane
coated</td></tr>
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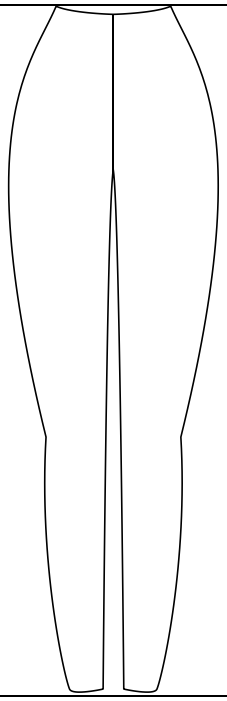
Cotton</td><td>Style 2010-02, Pants</td></tr>
<tr><td></td><td rowspan="2"></td></tr>
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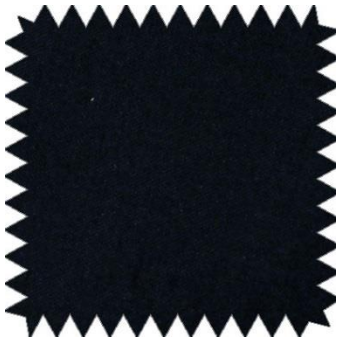
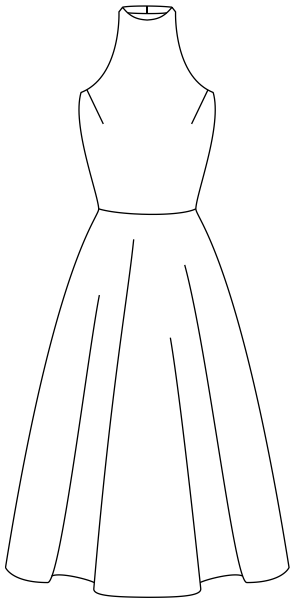
<tr><td></td><td>100%
Silk</td><td></td></tr>
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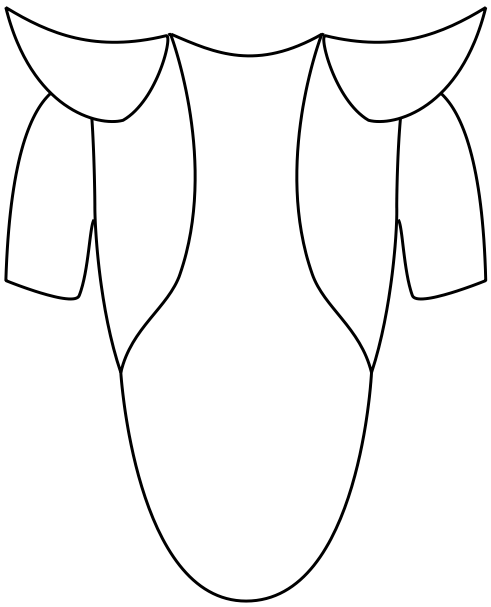
Paper</td><td></td></tr>
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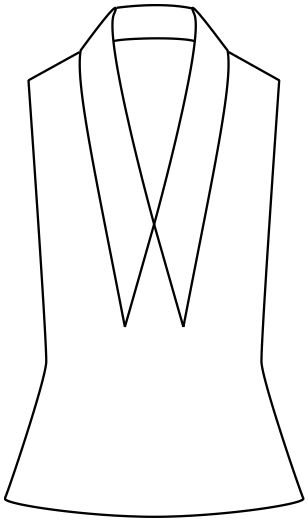
<tr><td></td><td>Paper</td><td rowspan="2">
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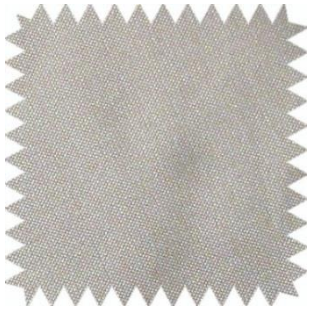
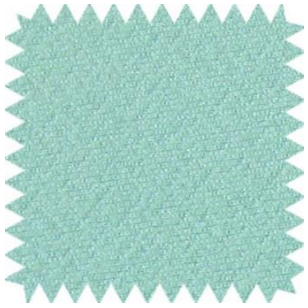
<tr><td></td><td>100% Silk</td></tr>
<tr><td></td><td rowspan="2">100%
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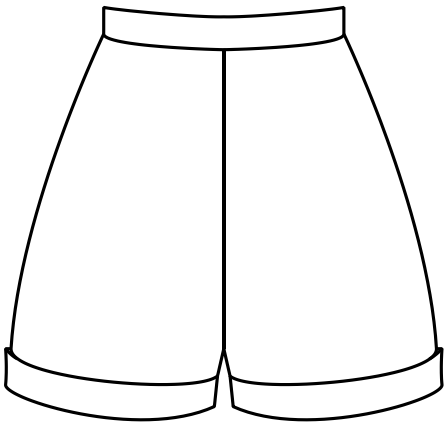
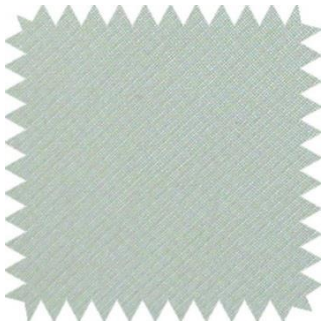
<tr><td></td></tr>
<tr><td></td><td>100%
Rayon</td><td></td></tr>
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