

## If You Give a Child a Bucket Hat, They Will Ask For a Dress With Pockets

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**Context:** Sustainable apparel manufacturing is becoming increasingly necessary as 92 million tons of clothing and textile waste are estimated to be landfilled each year (Ruiz, 2023). Much of the one hundred billion garments produced annually are unnecessary as over-production contributes to the landfill waste. As brands plan assortments deciding what garments to manufacture, they must adopt sustainable design strategies to comply with new laws and regulations. Consumer demand for sustainable fashion is also rising (Bringe, 2023). One sustainable design strategy is to make garments that consumers find meaningful. By making an attachment toward clothing, people will likely care for it better increasing its longevity and sustainability (Ceballos & Min, 2020; DeLong et al., 2013). Another strategy that can be used to combat the textile waste from manufacturing is zero-waste (ZW) pattern design. ZW patterns utilize the full fabric as opposed to typical patterns where cutting of garments results in about 15% of the fabric unused due to pattern shapes not tessellating together. My work for many years has been focused on ZW pattern design (Carrico, 2020, 2022a, 2022b, 2024), but never making childrenswear. McKinney (2022a, 2022b) created childrenswear using ZW patternmaking. Their ZW revision of a classic denim jacket produced findings that “have a broad potential impact on sustainable apparel manufacturing, given the style's timelessness” (McKinney, 2022b, p.3). Thus, the initial **design challenge** was to demonstrate how a traditional, or typical, style of a child's dress can be cut ZW while maintaining the visual appearance and fit of the original dress.

The cause-and-effect lessons from the award-winning children's book *If You Give a Mouse a Cookie* by Laura Numeroff (1985) were the inspiration for this ZW ensemble made for a young girl. It started with a bucket hat made from a variety of purple cotton fabric scraps. The hat was not enough, however, as it became apparent there needed to be a dress to go with it. To further enhance the sustainability of the dress, I decided deadstock fabric should be used. Additionally, the dress should have pockets.

**Process:** The resulting ZW child's dress pattern includes pockets and a ruffle along the skirt bottom, all within 36 x 45 inches. The original (non-ZW) dress marker required the same amount of fabric without pockets and a ruffle (Figure 1). Working in Browzwear's VStitcher, changes to the original pattern include straightening the skirt sides and slightly reducing the volume of the skirts (Figure 2). The shoulder ruffles were narrowed, turned 90 degrees, and cut in two with a seam at the shoulder in the ZW pattern. Bodice pieces were cut at the square neckline shape to add a seam in line with the neckline. The side armhole pieces that are beneath the shoulder ruffle were also split and lines straightened to work best in the ZW pattern. One void in the marker yielded a nice shape for the necessary pockets. The other void was used to create bias strips that bind the pockets and face the necklines and armholes. With the increased seams, the dress has the potential to be graded in a range of sizes using the banded grading technique (Carrico et al., 2022).

The original design challenge was successfully met, as it maintains a similar appearance of the original garment using a ZW pattern. This video <https://youtu.be/hosC6YVMOec> shows the

original and ZW dress in VStitcher with pressure maps to indicate fit. The new dress also has the pockets young girls need pockets in their clothing. McKinney et al. (2023) exposed a considerable lack of pockets in girls' pants compared to boys' pants.

When selecting deadstock fabric for the dress to complement the bucket hat, a purple and white mini-check cotton shirting fabric stood out from the stack of choices due to its smooth hand and purple colors that matched the hat. The plaid pattern on the mini-check was a one-way design and the ZW pattern was made for two-way fabrics. Additionally, the mini-check fabric was not in yardage but large pieces left over from a previous project. Rather than consider a different fabric, a **second design challenge** emerged: to demonstrate how discarded fabric scraps – large or small – can be utilized to make unique and engaging garments. Since the hat was made from studio scraps, using scraps for the dress unifies the concept. The dress was still cut from the ZW pattern pieces, just not in one marker. The accompanying YouTube video includes images of the mini-check fabric with pattern pieces placed for cutting. Selecting scrap fabric also allowed for a mixing of prints within the dress to echo the mix of prints in the hat, creating cohesion in the outfit. After several iterations of colorways within VStitcher, a purple tonal cotton print fabric was selected for the pockets, skirt ruffle, and bodice center pieces. Narrow white lace trim was used on the ruffle hems, pocket tops, and front bodice seams. The closures in the back of the ZW dress are magnets to afford the child ease of self-dressing. The original Browzwear dress had buttons and buttonholes for closures. Stanley and McKinney (2017) stated that being able to dress oneself can encourage independence and agency in young children. The magnets can be much easier for a child or a care-giver to manipulate while donning and doffing.

**Cohesion and Conclusion:** The completed outfit demonstrates how deadstock and scrap fabric can be utilized in exciting designs for childrenswear using ZW patternmaking. The hat is complex due to the wide mix of print fabrics but limiting the dominant color to purple lessens the complexity. If the mix of so many prints was scaled up to a full garment, it may be too complex for most consumers. Using the scraps in a small accessory, though, keeps the aesthetics pleasing, and the hat is reversible to a side made from one single print. The dress uses only two different fabrics but has additional visual interest through the lace trim and seam placements. The magnet closures are perfect for a precocious young girl who wants to dress herself, and the pockets provide a place to put important items. In total, the uniqueness of the dress and hat foster attachment by wearer and care-giver, thereby adding to the sustainability of the ZW patterned garment. Future work should investigate converting patterns to ZW for other typical styles. Researchers can explore applying the banded grading technique to this dress pattern to generate a range of sizes. More garments and accessories can be designed using discarded fabric scraps, and consumer acceptance of such products can be evaluated.

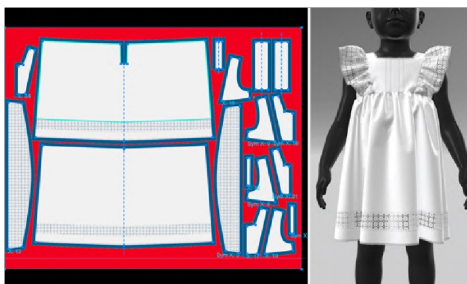


Figure 1. Original dress from Browzwear

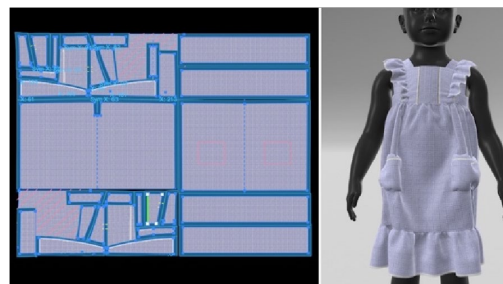


Figure 2. Dress modified to cut zero-waste

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