

Strike Time Backdrop Support



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Summary

The Strike Time Dance Company is a Hope College organization that teaches elementary school children in Michigan and the surrounding area about dance. Each year, the company members write an interactive skit that incorporates the four major dance forms (ballet, tap, jazz, and modern), the three elements of dance (space, time, and energy), and another educational theme (such as nutrition, physics, or history). This skit is performed at elementary school assemblies. To enhance the setting of their skit, the Strike Time Dance Company performs in front of a backdrop. The backdrop consists of painted bed sheets and is supported by a structure assembled before and disassembled after each performance. The current backdrop support, while effective, is unwieldy and inefficient. A new backdrop support that is more easily operated and transported would be beneficial to the Strike Time Dance Company.

Many factors were considered while designing a new backdrop support. The support must be portable – all of the pieces must be able to fit in the cargo area of the van in which the company travels and each individual piece should be easy to carry. It should be able to be quickly assembled before and disassembled after each performance. In addition, allowing the height and width of the backdrop support to be adjustable would be beneficial in order to accommodate different performance areas and variation in the size of the backdrop. The backdrop support also needs to be durable and reliable.

Several concepts were considered before the final design of the Strike Time backdrop support was selected. One possible design consisted of a retractable clothesline that could be attached between two poles. The poles could stand vertically on attached cross-shaped bases, and their height could be adjusted with small stacking pieces. Another design consisted mainly of telescoping tubes. Two telescoping tubes could be inserted vertically into a hole in a square base, and a spring locking mechanism would be used to secure them at the desired height. Each of these standing tubes would have a protruding ledge to hold a telescoping crossbar, which would hold the backdrop.

After some preliminary testing, it became obvious that three supports (one on each end of the crossbar and one in the middle) would be needed to properly hold the backdrop, so the final design is significantly different than the concepts. The final design consists of three bases, three vertical legs, and a crossbar. The bases were constructed of pine wood and tile. For each base, three pieces of wood were cut to dimensions of 1.5 in. thick, 5.5 in. wide, and 6 in. long and a hole of 1.75 in. diameter was drilled through the center of each piece. Then, the three wood pieces were glued on top of each other and to the center of a 12 in. by 12 in. tile. Each leg is made of one 5 ft. length of 1 in. diameter PVC pipe and one 5 ft. length of ½ in. diameter PVC pipe. The smaller pipe slides inside of the larger pipe, and their length is secured by a ¼ in. bolt and nut that can be inserted through holes drilled in the pipes. The crossbar consists of three PVC pipes of 1 in. diameter and two PVC pipes of ½ in. diameter that are made in the same way as the legs, and its length can be adjusted in the same fashion. The crossbar is attached to the legs by a clip that inserts through holes in the ends of the crossbar and legs.

This new backdrop support is an improvement from the current design. The pieces are smaller and lighter than their corresponding parts, which will make transportation easier. It has more flexibility in its height and width and more reliable connections to secure the crossbar's length. The increased reliability will ease the assembling and disassembling process, making it faster. Hopefully, the new backdrop support will be a benefit to the Strike Time Dance Company.