

Project Deliverable I - Design Day

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Summary for Judges:

Ice cube is designed to provide the joy of skating for people with disabilities. This device will help increase the participation of kids with disabilities while ensuring safety and comfort.

All the time, users with disabilities and their attendants are discouraged to participate in sport/recreational activities because of the lack of appropriate assistive system and fear of injury, feeling excluded and isolated. We want to change that, helping kids with disabilities to be able to experience the joy of skating.

Our product is design to arrest their fall before they hit the ice and prevent any kinds of injuries to both the user and the attendant. With a lightweight but strong design, it provides 360-degree protection, safety and comfort. Overall, it is an opportunity to improve physical and mental health for these kids and finally yet importantly, promote inclusion.

Skating may not be an essential life skill but there are many kids who have a passion to learn how to skate but never get the chance. For kids and people with disabilities, the fear of injury can often sideline them from trying something new. We want to ensure that anyone with the passion to skate is able to do so without fear of injury to themselves or those around them. In addition, people with disabilities often feel excluded from daily activities, such as skating during the wintertime, due to a lack of sufficient equipment. By creating a skating aid specifically for people with disabilities, they will get the equal chance to know the joy of skating.

Our skating aid could be used for anyone who is new to skating and wants to learn, but it is specifically designed for those with disabilities. There have been other patents for skating aids, some specifically designed for people with disabilities and others simply for new skaters, Some other skating aid patents (shown in our slideshow) are good for beginner skaters but don't catch the user if they begin to fall which is beneficial to reduce risk of injury. Some with a seat ensure that the user doesn't fall but doesn't offer the full feeling of skating or protecting all around. Others that offer more protection are difficult to transport.

Our design is different from the rest because it provided 360 degree protection for the user that includes handles at the front and sides of the product in case the user loses his balance or falls forward, and a seat that will catch the user if they fall backwards. Other devices with protection are difficult to transport but our product is foldable so that it is easy to store and carry around. The product is light so that it can easily be carried on and off the ice. In order for the product to be useable for many different people, the seat adjusts with the use of telescoping poles

to accommodate the heights of different users. There are also different slots for handles so that the user can adjust them to their comfort. In addition, the seat turns into a bench for the user to sit once once they are tired and for when they would like to tie up their skates.

Our team ran into a few difficulties while building our final prototype. Our main obstacle was in cutting the panels which needed to be done using the jig saw. Unfortunately, even when Brunsfield was open, we were often unable to use the jig saw because it didn't belong to them and so we weren't always able to get access. The blade also went missing. As a result, the panels took longer to cut than expected and they are currently being glued. In addition, we had a lot of parts that we needed to 3D print and with many students needing the printers, it was difficult to gain access to the printers needed. With the time before design day, we will be able to complete all of our printing and complete our project.



The base of our skating aid



The panels glueing together waiting to dry so that we can attach them to the base

Our product will not only keep users with disabilities safe from injury, but will also allow them to feel included in winter events with their friends; whether it is public skating or a joyride on the Canal. Our design allows anyone to learn how to skate without fear of injury and we look forward to presenting it on design day.