

## Adaptive Device for Specific Disability

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For many people with disabilities, their accessibility or ability to perform activities is hindered. Often times, resources and devices that will help them perform these activities with added ease are expensive and hard to get. The purpose of this paper is to show and demonstrate an adaptive device that is affordable for those who deal with impaired eyesight.

#### **Rationale and Intent**

My idea for this adaptive device is a nail polish station that helps people with impaired eyesight easily read nail polish bottles as well as actually paint their nails. More often than not, the names of the polish is in tiny font and hard to read. With this device, it is easy to place the bottle underneath the magnifier and read the label with ease. In addition, the actual polishing of the nails is difficult for someone with impaired eyesight a nail might be hard to see or drawing nail art might be a hard task. The magnifier allows for the user to place their hand underneath it, while allowing enough space to physically paint and view more closely the nail. This station is not just for households but could also be used in salons, for professionals that need added magnification when painting. Another important feature is the swivel ability of the magnifier. This makes it easier for the user to manipulate the magnifier to their specific needs.



Pictured: Adaptive Nail Polish Station

### **Materials Needed**

What makes this adaptive device so useful is that it is affordable to someone who has impaired eyesight. Devices related to eyes are very costly or hard to acquire without resources or specific programs. Some devices might be too costly for “leisure” activities that are not considered necessary. While nail painting might not be considered necessary, it is still an activity that should be accessible to all with ease. The materials used to make this device are easy to get. Specifically, the magnifier used can be found at most department or general stores. The one used for this prototype was bought at Walmart for only \$4.95. The base of the station is made out of scrap wood that was already on hand. The average consumer could buy a premade stand of their choice from any store or they could make a custom one themselves. Generally, it would require someone who was good at carpentry. On average the wood required to make the station would cost approximately \$10.00. Painting of the stand is optional, which would be an additional cost. There was also one screw used to attach the magnifier to the stand. Screws cost very little at any hardware store, usually under \$1.00. All together, if one was to build this device themselves, it would cost them approximately under \$20.00. This is very affordable for the average user.

### **Instruction**

It is pretty simple to make this device for someone who desired it. First of all, one would need to acquire some wood to make the base of the device, which also acts as shelving for nail polishes. The base can have between 1 and 3 tiers of shelves, with an extra 6 inches of wood at the back of the shelves for attachment of the magnifier. Assembling this base would not be complicated for someone with basic carpentry skills or an online shelving tutorial. If one desires, they can paint the base any color. Next, one would need to acquire a magnifying glass that is available at most department stores. As stated before, they cost very little. The magnifier of one's choosing should have a small hole at the end of its handle for attachment. Using a screw, attach the magnifying glass to the extra wood at the back end of the shelving base. The screw should be loose enough to allow for the magnifying glass to rotate in a swivel motion. Clearly, the assembly is relatively simple, considering the shelving unit can be purchased pre made if one chooses.

### **Other Information**

The design of this device was centered around the idea that everyone should be able to perform leisurely activities with ease. Painting nails is a fun, relaxing activity that can give someone confidence or simply allow them to express themselves. Keeping in mind the population of people with eyesight impairment, this task can be frustrating and difficult. One study states that out of 195,801 participants, 6.0% of people 18 years or older had a visual impairment (Caban & Lee, 2005). This population cannot always rely on someone to do their nails, rather this device allows for the added independence in performing leisurely activities. In addition, this device can serve for professional use. Visual impairment is likely to interfere with

life goals common to young adults, including career goals, which ultimately results in emotional stress (Boerner & Cimarolli, 2005). This device allows someone with a visual impairment to work in the salon as a nail technician with ease. This device opens up doors for career opportunities in the cosmetology field.

## References

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