

## Customizable Classroom Bench

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### Abstract

A bench is a long seat on which multiple people may sit at the same time. Benches are typically made of wood, but may also be made of metal, synthetic materials. Many benches have arm and back rests; some have no back rest and can be sat on from either side. ... Benches are used both outdoors and indoors. Everyone would consider a more comfortable place or a seat to sit in rather than an uncomfortable old one and these days there has been a great concern about health issues and back problems and joint related problems are the most concerning issues to today's society. So we have come up with the idea of a bench that is adjustable according to the person's height and is adjustable for any number of people according to the seating to arrange it in a position comfortable to them.

### 1. INTRODUCTION

Benches are used in schools and colleges by the students for sitting, reading and writing purposes. They can be classified on the basis of seating capacity, material used, etc.e.g. Single desk Bench, Wooden school/college Bench and individual benches. Benches give your customers or patrons a place to sit while they're waiting for someone, or just to relax and enjoy the outdoors. These products make a space more inviting and encourage people to congregate there. Add one to a bus stop, in front of your business or organization, and

in downtown or public areas.

### 2. RELATED WORK

A Bench is used sit (rest) on the seat along with different purposes. Like: study purpose, relax...An Existing solution is made up with wooden blocks and iron rods weld together in correct manner to form that bench. A tablemate is a type of folding furniture, a table with legs that are adjustable about the height and the table top can be put down by removing the supports at the bottom. This is intended to make storage more convenient and to make the table more portable. Many

folding tables are made of lightweight materials to further increase portability.

### 3. IMPLEMENTATION

The main objective of the this project is to make the adjustable class room bench .which the means is to adjust the seat in our comfortable position and increase the leg room by using some mechanism under the seat. The mechanism helps the movement of seat in horizontal direction (move in or out). This project gives us the most comfortable bench in our classroom.it works under the mechanism of car seat. Its working principle is to move the bench seat front and back by using slider and lever. Lever helps to take a grip in sliders. If we want adjust the seat then we have to pull the lever and move it in adjustable manner. Students after entering high school spend almost 8 hours a day in their schools and colleges. Mismatch between bench dimensions and body dimensions cause great discomfort to them. Due to these benches major posture changes were observed in the students. Major posture changes were found in joints. We definitely have different sizes in the benches we sit on but one size of bench is not comfortable for all.

### 4. EXPERIMENTAL RESULTS

First, we have to bring out the normal class room bench and remove the wood

block(seat) which we are sitting on the bench.

Take sliders (iron rods) and placed on the bench legs and welded it.

One rod is fixed to the legs and another one is free to move

Then after we installed the bearing in between the slider for free movement.

The iron/steel seat is place on the slider and weld together perfectly.

Along with that we need to provide the lever to control the movement.

Lever helps to control seat either move or not.

Finally, we should give a colouring to it.



## 5. CONCLUSION

We have made the bench which is for all the people who are facing the problems with different heights and sitting postures of the bench .which helps and maintains a comfortable seating during the classes and also helps reduce health issues related to spine and also leg joints. This project has been done successfully.Further, this can be developed in such way that the moment of rest wooden block in vertical direction (lift up and down). We can add the vertical moment in front part of the bench. We can also add the desk in it and bag hangers too.

## 6. REFERENCE

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