



**Keep stretching  
safe**

# What's the Problem

---

- When most dancers get hurt it's mainly while their stretching. Dancers can't not stretch before they dance, stretching is very important, unless you want to get even more hurt than what stretching could do.

# Criteria & Constraints

---

## Constraints (Limitations and Conditions)

1. budget is 15\$ for each prototype.
2. Can not test on non flexible people.
3. Can not hurt anyone.

## Criteria (standards or features to be measured)

1. will people get hurt while they are stretching.
2. will it be portable.
3. will it be small enough to fit a certain amount of space.

# Research

---

1. “Performing repetitive movements for hours a day coupled with a low amount of recovery time in between shows, increases the performer's risk for chronic overuse injuries “

"7 Common Dance Injuries (and How to Prevent Them)." *Neuro Tour Neuro Sport*, 17 Sept. 2023, [www.neurotour.com/blog/7-common-dance-injuries](http://www.neurotour.com/blog/7-common-dance-injuries). Accessed 17 Aug. 2023.

2. 160,000 people were treated for dance related injuries.”

"Injury Prevention Series Dance." *Boston Children's Hospital Orthopedics and Sports Medicine*, 17 Sept. 2023, [www.childrenshospital.org/sites/default/files/2022-04/Injury-Prevention-Dance.pdf](http://www.childrenshospital.org/sites/default/files/2022-04/Injury-Prevention-Dance.pdf). Accessed 16 Sept. 2023.

3. Repetitive movements are a risk of injuries like ankle sprains, torn muscles and strains and dancers do repetitive moments so they are always at risk of injury.

"The Benefits of Stretching." *Physical Therapy and Rehab*, 17 Sept. 2023, [www.strengthtrainingrehab.com/stretching-prevent-injury-body/](http://www.strengthtrainingrehab.com/stretching-prevent-injury-body/). Accessed 17 Aug. 2023.

4. Stretching is very important for dancers because not stretching can cause even more pain and suffering.

"The Benefits of Stretching." *Physical Therapy and Rehab*, 17 Sept. 2023, [www.strengthtrainingrehab.com/stretching-prevent-injury-body/](http://www.strengthtrainingrehab.com/stretching-prevent-injury-body/). Accessed 17 Aug. 2023.

## 5 Vocab words you need to know

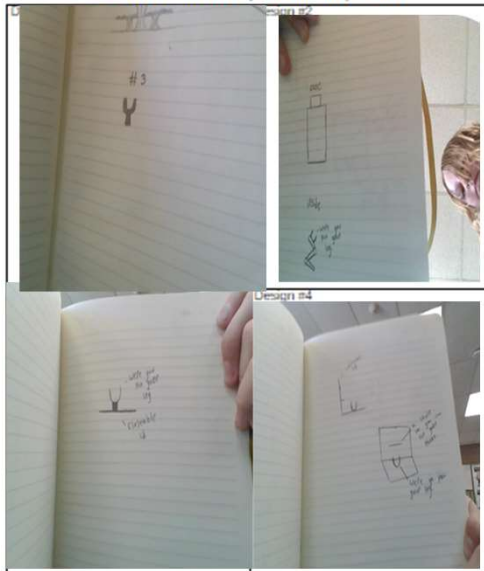
---

1. Repetitive: doing the same thing several times.
2. Dancer: involving doing or saying the same thing several times, especially in a way that is boring
3. Injury: Harm or damage that has been done.
4. Stretch :To extend or spread out.
5. splits: a motion of the legs facing the opposite direction.

# Sketches and Concept Rubric

## YOUR CONCEPT SKETCHES

Sketches with Labels, Dimensions, Details



Design Ideas	Constraints			Criteria			Total Score
#1							
#2							
#3							
#4							

# Materials

---

- Foam block
- Knife
- Super glue
- Stretch bands

# Procedure

---

1. Cut divots in foam yoga block.
2. Super glue stretch bands to foam yoga block.
3. Test to see which prototype is better for keeping dancers safe.
4. Record data.



Scale from 1-4

## Data Collection Table

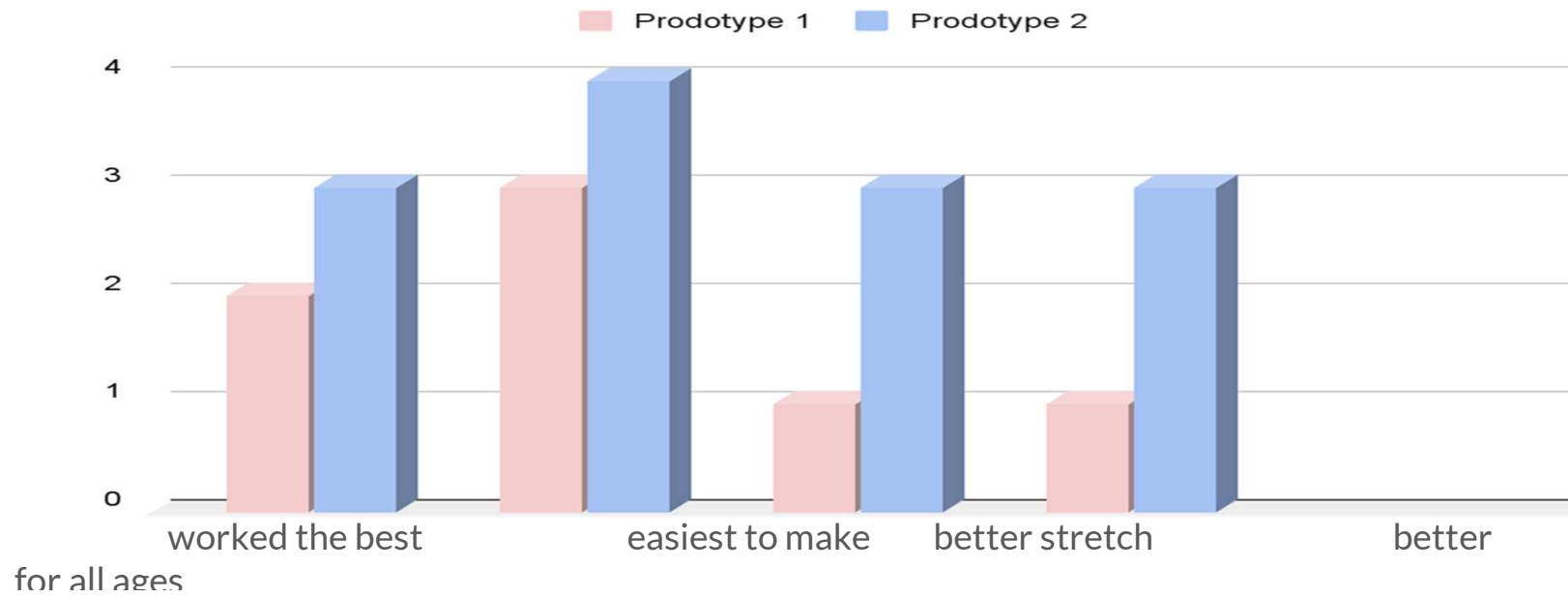
	Prototype 1	Prototype 2
Easiest to Use	3	4
Easiest to make	3	2
Easiest to transport	4	4
Better stretch	1	4
Better for all ages	1	4

scale form 1-4

# Data Analysis Graph

---

Points scored



# Critique and Redesign

## Prototype 1

- Different sizes of leg hold
- Doesn't hold leg well
- Make sure it holds leg well

## Prototype 2

- Holds leg well
- Hard to keep in one spot
- Add grips to the bottom

Prototype 2



Prototype 1

# Evaluate Solutions

---

Prototype 2 resulted in a better stretch and it was easier to use for all different ages.

Prototype 2 also has a knot in the stretch band as a way to hold your stretch better than prototype 1 that does not have the knot.

Prototype 1 wound up slipping more and slightly causing pain in the heel.

If things did go wrong I would redo my prototypes, then change my original data to my new data.

# Application

---

- Dancers getting hurt is a worldwide problem for both dancers and doctors. Think about it, who helps dancers heal?
- I would probably make more prototypes.

# Acknowledgements

---

“ I would like to thank two people. My mom and my science teacher. My mom helped with multiple things during this projects. My science teacher, she has provided not just me but the whole class many great sites for this project.”