



Blow Biggest Bubbles?



Stickiest?



Bounciest?



Most viscous?

# Gluep Manufacturing

Making gluep that will .....



Stretchiest?

# Design Criteria

Describe the goal for your gluep product.

# Constraints

You are limited by resources and time.

You have one small bottle of glue, 100 ml of borax solution

# Standard Recipe (control)

1. In one container, dissolve 10 g of white glue in 10 g of tap water.
  - a. The density of water is 1.00 g/mL, so a graduated cylinder rather than a balance for water. DO NOT put glue in a graduated cylinder.
  - b. Use a paper cup and balance to measure the glue.
2. In a second paper cup, dissolve 1 g of borax in 10 g of water.
3. Mix the two solutions together by adding the glue mixture to the sodium borate mixture.
4. Stir for 30 seconds, then knead the gluep with your hands for 30 seconds.

# Testing

Describe your testing procedure. Take photos with your chromebook as you test and insert the images to illustrate your description.

# First Experimental Recipe -

Change and highlight your change in the standard recipe below.

1. In one container, dissolve 10 g of white glue in 10 g of tap water. (You can assume that the density of water is 1.00 g/mL if you want to use a graduated cylinder rather than a balance for water.
2. In a second container, dissolve 1 g of borax in 10 g of water.
3. Mix the two solutions together by adding the glue mixture to the sodium borate mixture. This is called the 10:10:1:10 formula (or 1:1:1:1).
4. Stir for 30 seconds, then knead the gluep with your hands for 30 seconds.

# Testing

Repeat your testing procedure. Take photos with your chromebook as you test and insert the images to illustrate your performance description.

Record the performance of your gluep sample.

## Second Experimental Recipe -

Change and highlight your change in the standard recipe below.

1. In one container, dissolve 10 g of white glue in 10 g of tap water. (You can assume that the density of water is 1.00 g/mL if you want to use a graduated cylinder rather than a balance for water.
2. In a second container, dissolve 1 g of borax in 10 g of water.
3. Mix the two solutions together by adding the glue mixture to the sodium borate mixture. This is called the 10:10:1:10 formula (or 1:1:1:1).
4. Stir for 30 seconds, then knead the gluep with your hands for 30 seconds.



# Testing

Repeat your testing procedure. Take photos with your chromebook as you test and insert the images to illustrate your description.

Record the performance of your gluep sample.

# Third Experimental Recipe -

Change and highlight your change in the standard recipe below.

1. In one container, dissolve 10 g of white glue in 10 g of tap water. (You can assume that the density of water is 1.00 g/mL if you want to use a graduated cylinder rather than a balance for water.
2. In a second container, dissolve 1 g of borax in 10 g of water.
3. Mix the two solutions together by adding the glue mixture to the sodium borate mixture. This is called the 10:10:1:10 formula (or 1:1:1:1).
4. Stir for 30 seconds, then knead the gluep with your hands for 30 seconds.

# Testing

Repeat your testing procedure. Take photos with your chromebook as you test and insert the images to illustrate your description.

Record the performance of your gluep sample.

# Fourth Experimental Recipe -

Change and highlight your change in the standard recipe below.

1. In one container, dissolve 10 g of white glue in 10 g of tap water. (You can assume that the density of water is 1.00 g/mL if you want to use a graduated cylinder rather than a balance for water.
2. In a second container, dissolve 1 g of borax in 10 g of water.
3. Mix the two solutions together by adding the glue mixture to the sodium borate mixture. This is called the 10:10:1:10 formula (or 1:1:1:1).
4. Stir for 30 seconds, then knead the gluep with your hands for 30 seconds.

# Testing

Repeat your testing procedure. Take photos with your chromebook as you test and insert the images to illustrate your description.

Record the performance of your gluep sample.

# Conclusion

Which recipe best met your goal?

# Discussion

What problems or issues arose during your testing procedure?

What more could be done to make the best gluep if you had more time and unlimited supplies?