The Science of Slime Lab Report

My Group #_____ **Type of Slime We Created _____**

<u>Directions</u>: You and your group will record the properties of the slime recipe you created (Slime #1, 2, or 3). Then, you will visit the work of two other groups to observe and record the properties of the other two recipes. Record all observations in the data tables below.

My Group's Data

Type of slime recipe we produced (borax, sand, or liquid-based)	
General Observations about Our Slime (Qualitative)	
What does it look like?	
What does it feel like?	
Is it more like a liquid, solid, or in between?	
Does it slide out of the container easily?	
When you hold it, does it feel heavy or lightweight?	
Does it return to its previous shape if I stretch it a little?	
Other things we noticed about our slime:	

Data Collection (Quantitative)
<u>Directions</u>: With your slime sample in the container provided, perform the following tests and record the data you collect in the space provided.

Viscosity

<u>Directions</u>: Pour your slime sample from one container into another container. Rate your observations of what happened with your slime using the scale below.

How easily could you pour your slime sample into another container?

I could pour it & it flowed easily		It was thick & didn't flow easily		It was too thick to pour at all
1	**2**	**3**	**4**	**5**

Viscosity: Collection of Data

<u>Directions</u>: To measure viscosity, you will put equal volumes of slime into two transparent cups. Then, you will rest a ball bearing on the surface of the slime and measure how long it takes for the ball bearing to hit the bottom of the cup. Make sure to measure the height of each sample of slime in each cup (this measurement should be uniform for all samples). Graph your results (time vs. slime sample type)

Data Table

Ball Bearing Position in Sample	Time	Notes/ Observations
Top		
Middle		
Bottom		

Graph

Graph: time vs. slime sample ID

Stretch Speed

<u>Directions</u>: Take your sample out of the container and place it on your lab table. Using consistent force, gently pull the sample about 2 inches in both directions. Let go of the sample and rate your observations of what happened with your slime using the scale below.

How easily could you pour your slime sample into another container?

It stretched & returned to its former shape easily		It stretched but didn't return to its former shape easily		It stretched some but didn't return to its former shape at all
1	**2**	**3**	**4**	**5**

Stretch Speed: Collection of Data

<u>Directions</u>: To measure stretch speed, you will form your sample into a cylinder and record how much the slime stretches in 5 second intervals. All cylinders of the slime samples should be of uniform size. You will hold the slime at one end, and place the other end at the top of the measuring tape marked zero. Then, record the distance the slime stretches in 5 second intervals until it either reaches the floor or snaps. Graph your results (distance stretched vs. time)

Data Table

Time	Length	Notes/ Observations
:00		
:05		
:10		
:15		
:20		

Graph

Graph: distance stretched vs. time

Elasticity	
<u>Directions</u>: Weigh your slime sample using the scale provided. Record your data in the table below.	
How much mass is in my slime sample?	
Mass of container alone	
Mass of container + slime sample	
Mass of slime sample	

Elasticity: Collection of Data		
<u>Directions</u>: To measure elasticity, you will form a ball of slime and drop it on a flat surface to measure the height that each ball bounces upward after hitting the ground. The measurement will be taken by recording a video of the bounce. You should include a ruler scale in the video. All samples should be of uniform mass. You should perform this at least 5 times to collect multiple measurements. All samples should be dropped from the same height. Graph your results (height of bounce vs. slime sample type)		
Data Table		
Trial	Height of Bounce	Notes/ Observations
Trial #1		
Trial #2		
Trial #3		
Trial #4		
Trial #5		

Graph

Graph: Height of bounce vs. slime sample ID

Attention!

The Lab Supervisor has just advised us that this traditional slime recipe will NOT work in its present format for the research that is being conducted. So, you and your group must find a way to modify the traditional recipe and improve it so it could be used in the research.

The only requirement is that it must meet **one (1)** of the following conditions:

- The viscosity must be different than the original (either more or less viscous)
- The stretch speed must be altered (slowed down or sped up)
- The elasticity is increased

As a group, decide which modification you will implement. Follow the steps below:

- Brainstorm with your group different ways to create the modification you chose.
- Record your thoughts on the bottom of this sheet.
- Then, produce your slime using the modified recipe.
- Write up the alterations you made to the original recipe.
- For the appropriate condition, test the new slime's properties and record your data.
- You will graph your data as before but this time, you will include the original results as a comparison.
- Use 2 separate colors for your different slime recipes.
- Include a legend on your graph showing which color represents each recipe.

What condition will your new recipe focus on improving?
What modifications will you make to the original recipe? Why do you think this will help you improve the original and meet the new condition? *

*You will use this information to complete your CER

Part 3 Evaluation of Data

MODIFIED RECIPE Data Collection
Directions: With your NEW slime sample, perform the appropriate test for the condition you were modifying. Record the data you collect in the space provided. Graph your data and include the original for comparison. Use 2 different colors and identify which sample they represent.

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Part 4 Explanation

<u>Directions</u>: After collecting and evaluating your slime data, answer the questions below.

What is a polymer?	
List and describe some properties of polymers.	
What are polymers used for?	
<u>FROM THE SLIME YOUR GROUP PRODUCED</u>:	
What properties of polymers were responsible for the behavior of the slime YOUR group produced?	
Compare and contrast the properties of the other slime produced from the other recipes to those of the recipe you made.	
How were they the same?	
What were some differences you observed?	
What explanation can you provide for this?	

CER
Claim, Evidence, Reasoning

Claim:

As a group, we think that _____ will improve _____
(state what you modified) *(tell the condition)*

Evidence: State the data that supports your claim.

Reasoning: Tell WHY each piece of evidence supports your claim.

Conclusion: In one sentence, sum up the results of your experiment. Were you successful?