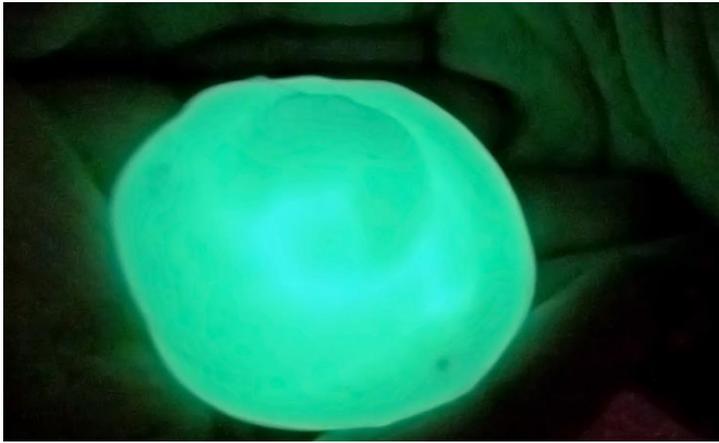


# MATHEMATICAL MODELING WITH CULTURAL AND COMMUNITY CONTEXTS (M2C3)

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## Slime Task!





What do you notice?  
What do you wonder?



**The 2<sup>nd</sup> graders are going to make slime for a science celebration. They need your help to decide which slime they should make. You can choose from a few popular slime recipes.**

▪



- What do you know about slime?
- What do you know about slime recipes?
- What do you need to know to help the 2<sup>nd</sup> graders decide which slime to make?
- What do you need to assume?



# Choosing a recipe

These are the 6 types of slime you will choose from:

**Fluffy**



**Edible**



**Flubber**



**Soapy**



**Glitter**



**Glow in  
the dark**



# Part 1: Calculating the Costs of Different Slime Recipes

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Version A

# Calculating the cost of slime

*First*, the 2<sup>nd</sup> graders want to know how much it will cost to make each of the slime recipes.

Each kind of slime has its own list of ingredients and information about how to make it.

You will need to use the ingredients to calculate how much it will cost to make a “class portion” of each type of slime.



# Slime Recipes

Slime Type	Special Ingredients
Fluffy	Shaving cream, glue, baking soda, saline solution
Flubber	Glue, water, liquid starch
Glittery	Glitter glue, borax, water
Glow in the Dark	Glue gel, borax solution, phosphorescent zinc sulfide (ZnS) or glowing paint, water
Edible	Sweetened condensed milk, cornstarch, flavoring (optional)
Soapy	Bars (or pieces) of soap, a jar, water

What do you notice about the ingredients?

# Slime Recipes

- Some of the ingredients come in individual containers.
- Some of the ingredients come in large containers that will provide enough for a **class-size portion**.

Slime	Special Ingredients
Fluffy	Shaving cream, glue, baking soda, saline solution
Flubber	Glue, water, liquid starch
Glittery	Glitter glue, borax, water



# Calculating the cost of slime

You can use prices of ingredients to find the total cost of each kind of slime.

Ingredient	Price for a table portion of slime	Price for a class portion of slime
Glue (washable)	\$1.50	\$20.00
Glitter glue or glue gel	\$3.50	
Baking soda		\$1.00
Liquid starch		\$7.00
Borax powder		\$4.00
Sweetened condensed milk	\$2.50	
Cornstarch		\$2.00
Glowing paint		\$24.00
Shaving cream	\$1.00	
Food coloring		\$3.50
Saline Solution	\$1.00	\$5.00

# Part 1 Task: Calculating Costs

- Use the information in the “**Cost of Slime Ingredients**” table to calculate the cost for making a “class portion” of each type of slime.
- Write **an equation** to show how you figured out the cost of a “class portion” of each type of slime.
- Include **unit labels** so that it is clear what each number means.
- Then add the cost to the “Comparing Slime Recipes” table.

# [OPTIONAL] Warm-up Questions

For example, let's say we are going to make Flubber Slime.

1. If you buy individual bottles of glue, how many will you need to buy for the whole class? How much will all the bottles cost?
2. If you buy a bottle of liquid starch, how many will you need to buy? How much will this cost?
3. What is the total price to make Flubber Slime for the whole class?
4. How could you write an equation to represent your work?

# Part 2: Choose a Slime Recipe (Version A)

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# Choosing a slime recipe

Cost is not the only factor to consider.

There are other differences between the different types of slime.

**Here are some criteria you can consider.**

Raise your hand for the criteria that are most important to you:

- Is the slime easy and quick to make?
- Does the slime have safe ingredients?
- Is the slime reusable?
- Does it have special features?
- Does the recipe make a lot?



## COMPARING SLIME RECIPES

Slime	Ingredients	Time to make	Safe Ingredients?	Reusable?	Special features	Size of a table portion of slime	Cost of a class portion
<b>Fluffy</b>	Shaving cream, glue, baking soda, saline solution	10 min	Yes	No, it loses the "fluff"	Fluffy	About 2 cups	
<b>Flubber</b>	Glue, water, liquid starch	10 min	Yes	Yes	Stretchy	About 1 ½ cups	
<b>Glittery</b>	Glitter glue, borax, water	10 min	Borax can burn skin	Yes	Glittery	About 1 cup	
<b>Glow in the Dark</b>	Glue gel, borax, phosphorescent zinc sulfide (ZnS) or glowing paint, water	10 min	Borax can burn skin; ZnS harmful if eaten	Yes	Glow in the dark	About 1 ½ cups	
<b>Edible</b>	Sweetened condensed milk, cornstarch, flavoring	30 min (heat it on stove)	Yes	Lasts for 1 or 2 days	You can eat it	About 2 cups	
<b>Soapy</b>	Bars (or pieces) of soap a jar, water	1-2 days	Yes	No, dissolve after 1 use	Clean	About 2 cups	

**What do you notice? What do you wonder?**

# Choose a slime recipe

- Use the information in the “Comparing Slime Recipes” table to compare and contrast the different types of slime.
- Decide which information is most important in your decision
- Decide which information is least important in your decision
- Use the information to rate and rank the different slime recipes
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# Rating and Ranking

- What does it mean to **rate** items?
  - Assign a score/points based on certain criteria
  - Examples: “*Rate* the quality of sleep you got last night.”
  - “*Rate* the most recent movie you saw on a scale from 1-5.”
- What does it mean to **rank** items?
  - Compare and order multiple items
  - Examples: “*Rank* your three favorite book genres.”
  - “*Rank* the pizza places in Tucson from most to least expensive.”
- Can you imagine a situation when you would need to rate *and* rank items?

# Organizing Ratings and Rankings

## COMPARING SLIME RECIPES

Slime	Notes					Final Rankings
Fluffy						
<u>Flubber</u>						
Glittery						
Glow in the Dark						
Edible						
Soapy						

# Part 2 Task: Choose a slime recipe

- Use the information in the “Comparing Slime Recipes” table to compare and contrast the different types of slime.
- Decide which information is most important in your decision
- Decide which information is least important in your decision
- Use the information to rate and rank the different slime recipes
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# Part 3: Write a Recommendation

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# Write a Recommendation

Tell the 2<sup>nd</sup> graders:

- **Which slime recipe** you think they should make for their science celebration, and why
- **What information you considered in your decision**, and what information was the **most** important and the **least** important
- **Your assumptions**
- **How much the slime will cost** to make
- How others could use your plan to choose a slime recipe for their class

Use pictures, numbers and/or words to show that your plan will work.

# Part 1: Calculating the Cost of a Slime Recipe. (Version B)

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# Making slime (Version B)

We're going to focus on three slime recipes:

**Fluffy**

**Flubber**

**Edible**

We want to find out how much each type of slime would cost for one portion and for a class portion.

Keep in mind that ingredients are sold differently!

# Making slime (Version B)

Here are the amounts per each ingredient:

<b>Fluffy Slime</b>	Shaving Cream	2 cups
	Glue	¼ cup
	Baking Soda	¼ teaspoon
<b>Flubber Slime</b>	Glue	1 cup
	Liquid Starch	½ cup
<b>Edible</b>	Sweetened condensed milk	14 fl oz.
	Cornstarch	1 Tablespoon
	Flavoring (optional)	¼ teaspoon

# Making slime (Version B)

This table shows how ingredients are sold.

Ingredient	Quantity	Price
Glue	8 fl oz.	\$1.50
Shaving Cream	10 fl oz. can make 6 cups of foam	\$2.00
Baking Soda	1 lb. (16 oz.)	\$1.00
Liquid Starch	64 fl oz.	\$7.00
Sweetened condensed milk	14 fl oz.	\$2.50
Cornstarch	1 lb. (16 oz.)	\$2.00
Flavoring	2 fl oz.	\$5.00

[This video shows how one can of shaving cream makes tons of foam!](#)

# Additional Examples of Slime Recipes

<b>SUPPLIES</b> <ul style="list-style-type: none"><li>• Washable PVA Glue</li><li>• Liquid Starch</li><li>• Water</li><li>• Measuring Cups</li><li>• Bowl</li><li>• Spoon</li><li>• Food Coloring</li></ul> <b>FLUBBER</b>	<b>SUPPLIES</b> <ul style="list-style-type: none"><li>• Washable PVA Glue</li><li>• Saline Solution</li><li>• Baking Soda</li><li>• Shaving Cream</li><li>• Measuring Cups</li><li>• Bowl</li><li>• Spoon</li><li>• Food Coloring</li></ul> <b>FLUFFY SLIME</b>
<b>STEPS</b> <ul style="list-style-type: none"><li>• Mix 1 C of glue and 1 C of water in bowl.</li><li>• Add food coloring if desired.</li><li>• Add 1/2 C liquid starch</li><li>• Stir thoroughly.</li><li>• Knead with hands.</li></ul>	<b>STEPS</b> <ul style="list-style-type: none"><li>• Add 3-4 C shaving cream to bowl.</li><li>• Mix in 1/2 C of glue</li><li>• Add food coloring if desired.</li><li>• Mix in 1/2 TSP Baking Soda.</li><li>• Add 1 TBL Saline Solution</li><li>• Stir thoroughly.</li><li>• Knead with hands.</li></ul>

Glow in the dark Slime  
<https://www.thoughtco.com/make-glow-in-the-dark-slime-605990>

Glitter Slime  
<https://www.thoughtco.com/easy-to-make-glitter-slime-recipe-609154>

Edible Slime  
<https://www.thoughtco.com/edible-slime-candy-recipe-609152>

Soapy Slime  
<https://sciencenotes.org/super-easy-soap-slime-recipe/>