Date: _____

Experiment Title:

Elephant Toothpaste Geyser

Student's Name : Samantha Meyer
Parent's Name : _____
Parent's Email : _____
Parent's Phone : _____

Purpose - Ask a Testable QUESTION:

Keep it simple, something you can do at home and measure, ideally with a number.

What size bottle opening makes the tallest elephant toothpaste geyser?

Background RESEARCH:

What are three things you learned relating to your topic? Use complete sentences.

1: I learned that the smaller the opening the higher the geyser goes, becuse of pressure

2: It was not very foamy for the big opening

3: The slower I added the yeast the higher the foam rose.

Independent Variable:

What is the one thing you want change in each trial?

**Remember only one thing can change to be a fair test, everything else must be controlled.*

Size of the bottle opening

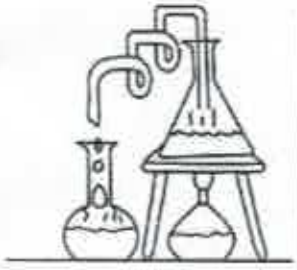
Forming a HYPOTHESIS (Taking your best guess):

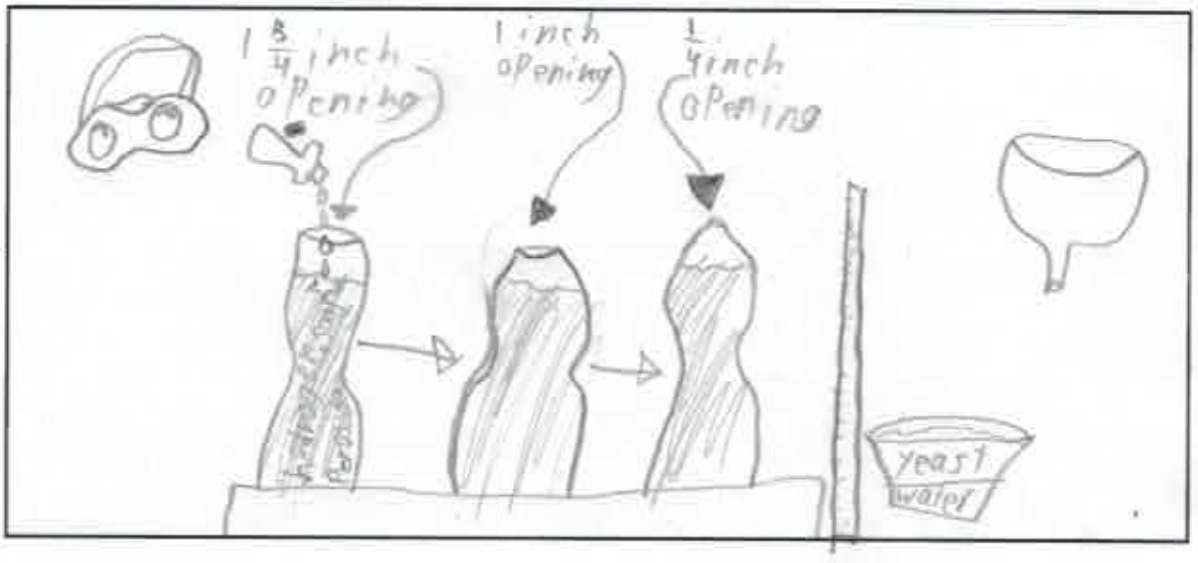
What do you think will happen when you change your variable?

The smaller the bottleo opening the higher the geyser

Student's Name : Samantha
(In case the pages are separated.)

Draw a picture of how your EXPERIMENT will be set up:
Be precise and use labels, we should have a clear idea what you will do.





Materials List:

List everything: specific equipment, supplies, safety items and measuring tools.

1: 1 bottle with 1 3/4 in opening.
2: 1 bottle with 1 inch opening
3: 1 bottle with 1/4 inch opening.
4: Ruler
5: Hydrogen Peroxide 3% 1.5 cups
6: 3 tbsp of dryactive yeast
7: 3 tbsp of warm water
8: 3 tbsp liquid soap (I used dawn)
9: Safety goggles
10: food coloring
11: tray
12: funnel

Student's Name : Samantha M
(In case the pages are separated.)

Step-by-Step Plan:
What are the steps to complete your experiment?
**Use complete sentences and include measurements and information needed to carry out your experiment precisely. We should be able to replicate your experiment based on your plan here.*

1: Get three $8\frac{1}{2}$ inch bottles and a ruler
2: make the openings $1\frac{3}{4}$ in $1\frac{1}{4}$ in openings
3: Get out gel food coloring (I used red, make sure to use 5 drops
4: Get 1.5 cups of hydrogen Peroxide 3%.
5: Get 3 tbsp of dawn soap and a funnel
6: Pour the hydrogen Peroxide and the soap in the bottles
7: mix in the food coloring by swirling around the bott
8: mix 3 tbsp of dry active yeast with 3 tbsp of warm wa
9: Put on the safety goggles
10: use the funnel to pour the active yeast in the bo
11: Step back and enjoy!
12:
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20:

Student's Name : Samantha
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Data Collection:

Record the results on the T Chart below.

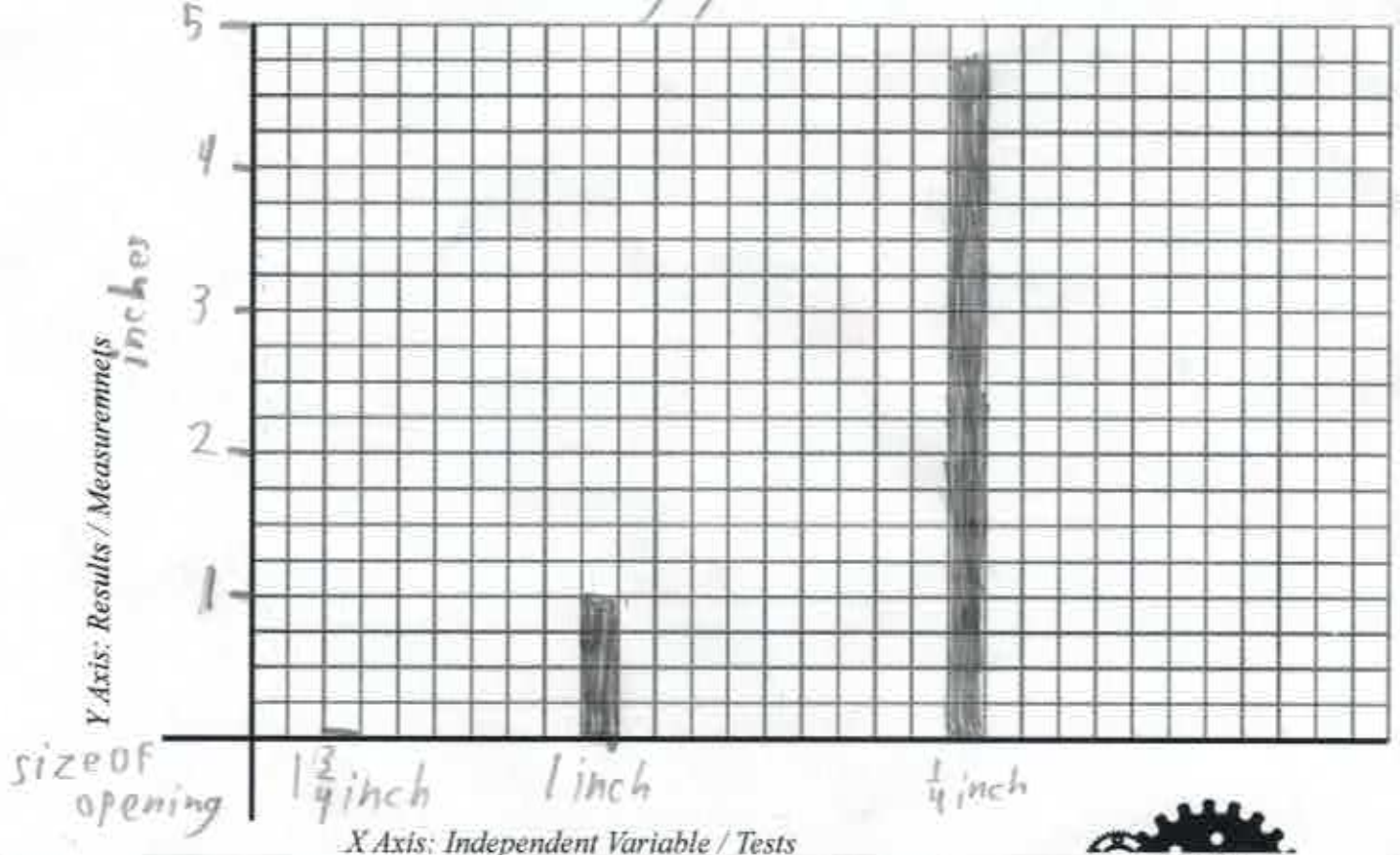
Independent Variable:	*Results / Measurement (remember to record your units)*
Test #1 $1\frac{3}{4}$ in. opening	0 inches above bottle top
Test #2 1 in. opening	1 inch above bottle top
Test #3 $\frac{1}{4}$ in. opening	4.75 inches above bottle top

Graphing:

Please graph the data above, we suggest using a bar graph.

**Remember to name the graph, label your units, decide on a range, etc. We made a couple of notes to help you get started. Make sure it is beautiful, precise, clean and clear.*

Title: How tall the geysers were



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Drawing CONCLUSIONS:

Examples: Which trial had the biggest results? Which had the smallest results? Which result was in the middle? Did anything suprise you?

The smallest opening sprayed the tallest elephant toothpaste geyser. The largest opening made the shortest geyser.

REPORT: Was your hypothosis correct? Why or why not?

**Please use complete sentences.*

Yes, the pressure from the bottle with the smallest opening made the foam go higher.

What would you do differently next time?

I would try making the smallest opening just a little bigger for better foaming instead of spraying.

What additional questions came to mind regarding this topic?

Does the shape of the opening affect the geyser? Yes! Example: If you make slits for the opening it should ruffle.