ELEPHANT TOOTHPASTE

NAME

CLASS / DATE

01 QUESTION

How does the amount of yeast added change how fast and how high the foam rises?

02 PREDICT BEFORE YOU MEASURE

AS YEAST AMOUNT INCREASES, THE FOAM MAY CHANGE IN WHAT WAY?

○ rise faster and higher ○ rise faster but reach a similar height ○ show no clear pattern yet

Choose a prediction before the trials; judge it from both height and time measurements.

03 VARIABLES

I CHANGE (INDEPENDENT)

I MEASURE (DEPENDENT)

I KEEP THE SAME (CONTROLLED) · CHANGED: YEAST AMOUNT (1, 2 OR 3 TSP). MEASURED: MAXIMUM FOAM HEIGHT AND TIME TO PLATEAU. KEEP 3% PEROXIDE, SOAP, BOTTLE AND YEAST-WATER TEMPERATURE MATCHED.

04 MATERIALS

- ☐ Goggles and tray
- ☐ Teacher-portioned 3% hydrogen peroxide only
- ☐ 1, 2 and 3 tsp yeast portions
- ☐ Matching soap, bottle and warm water setup
- ☐ Ruler, timer, labels and towels

05 PROCEDURE

SAFETY Use only 3% household hydrogen peroxide, never stronger lab or salon peroxide. Wear goggles and work over a tray under adult supervision. The foam can be warm and overflow quickly. Keep the bottle open and hands, faces and eyes clear; do not touch, taste or call the foam real toothpaste.

1 **LABEL CONDITIONS** Set out 1, 2 and 3 teaspoon yeast labels. Keep the bottle size and all teacher-measured ingredients matched. ☐

2 **PREPARE SAFELY** Wear goggles and work on a tray in a ventilated area. Use only 3% household hydrogen peroxide; never seal the bottle. ☐

3 **START ONE TRIAL** Mix the labeled yeast portion with the same warm-water amount, add it to the bottle and start the timer immediately. ☐

4 **MEASURE THE FOAM** Record the foam height every 10 seconds until it stops rising. Note the maximum height and time to plateau. ☐

5 **RESET AND COMPARE** Use a clean bottle setup for the next yeast amount. Compare maximum height and time; do not touch or taste foam. ☐

DATA AND EXPLANATION

NAME

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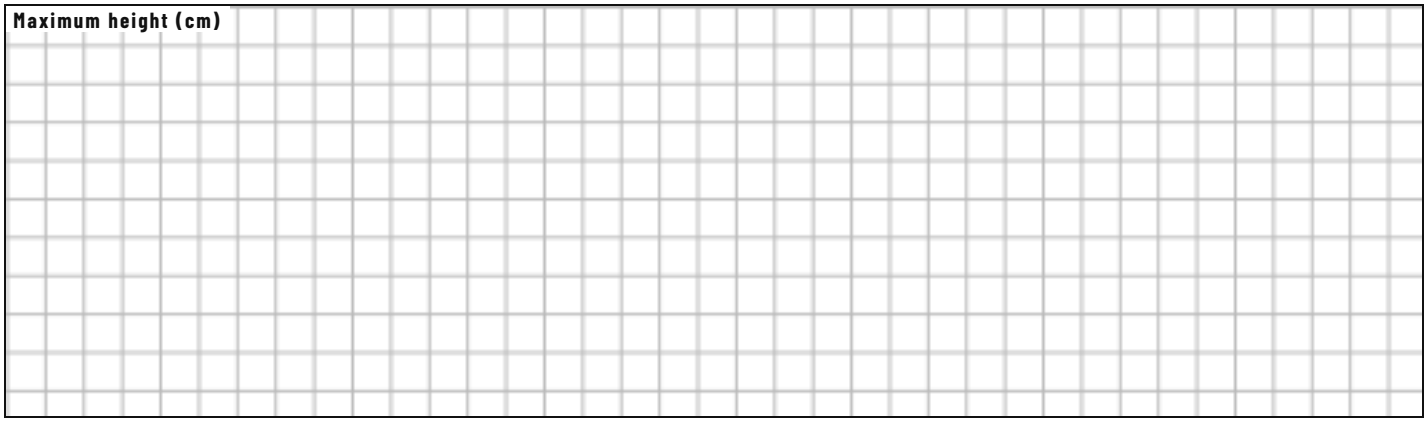
06 RECORD YOUR OBSERVATIONS

YEAST	HEIGHT REACHED (CM)	TIME TO PLATEAU (S)
1 teaspoon		
2 teaspoons		
3 teaspoons		

The maximum height is the greatest recorded foam reading. With 10-second checks, report plateau time at the observed check rather than inventing precision between checks.

SHOW ONE CALCULATION

07 MAXIMUM FOAM HEIGHT BY YEAST AMOUNT



Plot one maximum height for each yeast amount and label the points 1, 2 and 3 teaspoons. X: Yeast (teaspoons)

08 EXPLAIN IT WITH EVIDENCE

CLAIM

EVIDENCE

REASONING

Reasoning must use: yeast amount · 3% hydrogen peroxide · foam height · plateau · reaction evidence

09 THINK FURTHER

If the foam height levels off as yeast increases, what could you change in a teacher-approved follow-up to test whether peroxide is limiting?