STRAWBERRY DNA

NAME

CLASS / DATE

01 QUESTION

When equal masses of strawberry and banana are processed with the same method, how does the visible precipitate compare?

02 PREDICT BEFORE YOU MEASURE

EQUAL-MASS FRUIT SAMPLES WILL SHOW…

○ similar precipitate ○ different precipitate ○ not sure until observed

Do not assume a winner from chromosome-set count; plan to rate what the matched procedure shows.

03 VARIABLES

I CHANGE (INDEPENDENT)

I MEASURE (DEPENDENT)

I KEEP THE SAME (CONTROLLED) · NAME THE FRUIT CHANGED AND THE EXTRACTION CONDITIONS HELD THE SAME.

04 MATERIALS

- ☐ 50 g strawberry + 50 g banana
- ☐ Salt-water-dish-soap buffer (30 mL each)
- ☐ 2 resealable bags and 2 filters
- ☐ 2 labeled clear tubes or cups
- ☐ Cold isopropyl alcohol (30 mL each)
- ☐ Goggles and wooden sticks

05 PROCEDURE

SAFETY Rubbing alcohol is flammable. Keep it away from flames, sparks, hot plates, and other heat sources; have an adult handle the alcohol and any chilled container. Wear splash goggles, do not taste any sample, and never pipette by mouth. If alcohol gets into eyes, rinse with clean water and alert the supervising adult.

1 **WEIGH THE FRUIT** Measure equal 50 g portions of strawberry and banana into separate labeled bags. ☐

2 **MASH WITH BUFFER** Add 30 mL of the same salt-water-dish-soap buffer to each. Mash separately for 1–2 minutes. ☐

3 **FILTER** Pass each mixture through a fresh coffee filter into its own labeled clear tube or cup. ☐

4 **LAYER COLD ALCOHOL** With adult handling, slowly add 30 mL chilled alcohol down each tilted vessel wall; do not mix the layers. ☐

5 **OBSERVE** Compare pale material at the boundary. Rate it with one scale and note texture and location. ☐

DATA AND EXPLANATION

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06 RECORD YOUR OBSERVATIONS

FRUIT (TYPE)	VISIBLE AMOUNT (1-5)	TEXTURE (NOTES)	LOCATION (WHERE)
Strawberry			
Banana			

Visual rating: 1 = none · 2 = faint · 3 = clear amount · 4 = abundant · 5 = very abundant. Use the same scale for both fruit extracts; this is not a DNA mass measurement.

07 SKETCH THE TWO LIQUID BOUNDARIES

Draw one labeled tube for each fruit. Mark the fruit extract, cold-alcohol layer and any pale strands or clumps; label texture and location.

08 EXPLAIN IT WITH EVIDENCE

CLAIM

EVIDENCE

REASONING

Reasoning must use: mashing · detergent · filter · cold alcohol · cell material

09 THINK FURTHER

Which single extraction step could you change to test its effect on visible precipitate while keeping the fruit mass and the other steps matched?