

ILLUSTRATED STEPS / SAVE IT. FIND IT. BUILD IT.

BROWN BIRD

Fermentation science and a supervised, open-cup yeast comparison.



START HERE

01**GET READY**

Tools + clickable build map

02**FOLLOW THE STEPS**

One clearly numbered stage at a time

03**FIND IT AGAIN**

Quick reference + PDF bookmarks

Compare two cups of baker's yeast and keep a reusable results sheet. This companion corrects the video's chemistry; it is not a vodka-making guide.

NUKE ON TIKTOK

MORE FREE BUILD GUIDES

SOURCES / OpenStax: fermentation · Science Buddies: yeast test

BUILD MAP

NEXT

YOUR BUILD MAP

Tap a step to jump there. The printed page numbers work offline too.

HAVE THESE READY

- Adult helper; washable tray
- 2 matching clear cups, at least 250 mL each
- Active dry baker's yeast: 1 teaspoon total
- Table sugar: 1 teaspoon
- Warm water: 1 US cup total
- Teaspoons, measuring cup and thermometer
- Timer, labels, pencil and notes

READ IN ORDER

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QUICK REFERENCE / PAGE 10

BEFORE YOU START

Supervised 15-minute yeast experiment. Keep cups open. Do not taste, bottle or distill the mixtures. Record observations, then discard.

KEEP THIS COPY

Save the PDF with its guide ID. Use the build map, bookmarks, or your PDF reader's search to find a step later. Video and source links need internet; the instructions do not.

SETUP

Meet the tiny workers

READ BEFORE STEP 01

PREP

Yeast turns chemical energy into activity you can observe.



SUGAR BECOMES SOMETHING ELSE

- **During alcohol fermentation, yeast releases carbon dioxide and produces ethanol.**
- Carbon dioxide is a gas; it can form bubbles.
- Ethanol is a different substance that stays in the liquid.

WHAT THIS CAN SHOW

- **Compare visible foam with and without added sugar.**
- Foam cannot measure alcohol strength or establish drinkability.
- This experiment does not isolate fermentation from all other yeast metabolism.

SOURCES / OpenStax: fermentation

BUILD MAP

PREVIOUS

NEXT

SETUP

Correct the episode

READ BEFORE STEP 01

PREP

Three video shortcuts need a better explanation.



GAS AND SEPARATION

- **Fermentation must vent: trapped carbon dioxide builds pressure.**
- Keep this experiment uncovered.
- Distillation does not send pure alcohol out first; ethanol and water enter the vapor together.
- Ordinary distillation does not produce pure ethanol.

CHARCOAL IS NOT A SAFETY TEST

- **Activated carbon adsorbs some substances; barbecue charcoal is different.**
- The video supplies no verified testing that two filtering passes make its product safe.
- Clear appearance or smoother taste cannot validate that claim.

SOURCES / OpenStax: fermentation · Chemistry Teacher: distillation · Poison Control: charcoal

BUILD MAP

PREVIOUS

NEXT

STEP

Prepare a fair comparison

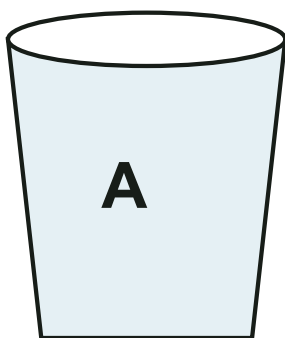
1 OF 4 / READ IN ORDER

01

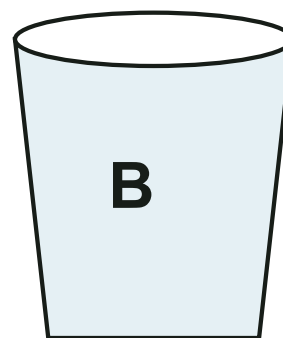
Work with an adult on a washable tray.

OPEN CUPS / SAME WATER, TEMPERATURE AND YEAST

Label before adding ingredients. Keep both cups uncovered.



1 tsp sugar added



No sugar added

SET UP TWO CUPS

- **Use matching clear cups, each at least 250 mL.**
- Label A: added sugar and B: no added sugar.
- Keep both open, side by side.

PLAN BEFORE MIXING

- **Predict which cup will show more foam, and why.**
- Gather your timer, thermometer and notes.
- Use fresh commercial baker's yeast, never collected wild microbes.
- Everything here is for observation, not eating or drinking.

SOURCES / Science Buddies: yeast test

[BUILD MAP](#)[PREVIOUS](#)[NEXT](#)

STEP

Mix A and B

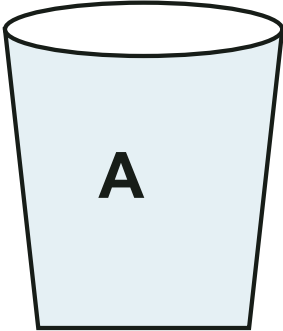
2 OF 4 / READ IN ORDER

02

Ask the adult to measure the warm water.

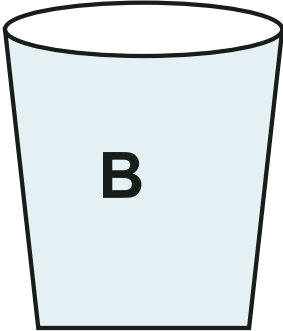
OPEN CUPS / SAME WATER, TEMPERATURE AND YEAST

120 mL water + 1/2 tsp yeast



1 tsp sugar added

120 mL water + 1/2 tsp yeast



No sugar added

EQUAL BASE

- Put 1/2 US cup of water at 110-115°F (43-46°C) in each cup.
- Dissolve 1 teaspoon of sugar in A only.

ADD THE YEAST

- Stir 1/2 teaspoon of active dry baker's yeast into each cup.
- Start your timer immediately.
- Record the starting temperature.
- Leave both cups open and undisturbed on the tray.

SOURCES / Science Buddies: yeast test

STEP

Observe for 15 minutes

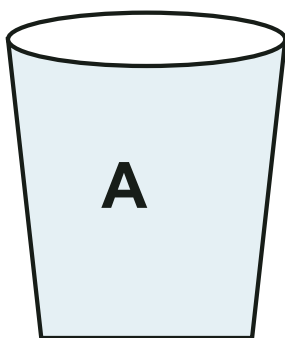
3 OF 4 / READ IN ORDER

03

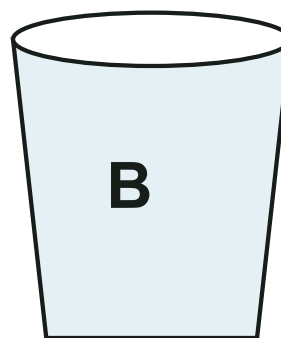
Look without stirring, tasting or putting your face over a cup.

OPEN CUPS / SAME WATER, TEMPERATURE AND YEAST

Observe at 0, 5, 10 and 15 minutes. Do not invent a foam result.



1 tsp sugar added



No sugar added

MAKE EQUAL OBSERVATIONS

- **At 0, 5, 10 and 15 minutes, record each cup's visible bubbles and foam.**
- Use the same viewing position and lighting.

DESCRIBE WHAT IS THERE

- **Use words such as none, scattered bubbles or foam layer.**
- Sketch what you see.
- This open-cup adaptation compares appearance; it does not measure gas volume.
- No visible difference is also a result.

SOURCES / Science Buddies: yeast test

[BUILD MAP](#)[PREVIOUS](#)[NEXT](#)

STEP

Record, compare, clean up

4 OF 4 / READ IN ORDER

04

Save the observation sheet before clearing the tray.

COPY YOUR OBSERVATIONS / NO EXPECTED RESULT

MIN	A: SUGAR + YEAST	B: YEAST ONLY	NOTES
0			
5			
10			
15			

Record foam, bubbles, appearance and changes. Blank = not yet observed.

FINISH THE RECORD

- **Note A versus B, date, yeast package and starting temperature.**
- Did your observation match your prediction?
- Name one thing you would keep the same in another trial.

END THE EXPERIMENT

- **At 15 minutes, ask the adult to discard both small mixtures down the sink with running water.**
- Wash equipment with dish soap and water; wash your hands.
- Do not keep, bottle, heat or consume the mixtures.

NOTE

Read the result honestly

KEEP THESE LIMITS WITH THE STEPS

REF

A small experiment answers a small question.



YOUR CONCLUSION

- **Write: In this trial, cup ____ showed ____.**
- Added sugar may explain the difference because ____.
- Separate observations from explanations.
- One comparison cannot represent every yeast or temperature.

IF NOTHING HAPPENED

- **Check temperature, yeast freshness and measurements before a fresh supervised trial.**
- Do not add chemicals or extend storage to force a result.
- Keep this guide and your notes together for an easy repeat.

SOURCES / Science Buddies: yeast test · OpenStax: fermentation

BUILD MAP

PREVIOUS

NEXT

QUICK REFERENCE

Read the full steps first. Tap any row to return to its instructions.

BEFORE STEP 01

Supervised 15-minute yeast experiment. Keep cups open. Do not taste, bottle or distill the mixtures. Record observations, then discard.

01	Prepare two cups Label matching open cups A and B; make a prediction.	P05
02	Mix equal bases Each: 1/2 cup warm water, 1/2 tsp yeast. A alone: 1 tsp sugar. See Step 02 for temperature.	P06
03	Observe equally Record bubbles and foam at 0, 5, 10 and 15 minutes.	P07
04	Record and finish Compare results; discard with an adult, wash equipment and hands. Keep your notes.	P08

NUKE SAYS

Useful science survives the download folder.