LearnStack

Ages 8-12

No Lab Needed!

Science Experiments at Home

25 Wow-Worthy Experiments Using Things You Already Have!

By LearnStack

Perfect for Curious Kids, Parents & Teachers - India

How to Use This Book

START HERE

Welcome, young scientist! This book is not just for reading. It is for doing, testing, laughing, spilling a little, wondering a lot, and saying, "Wait, why did THAT happen?"

Safety Rules First

1. Ask an adult before you begin. Some experiments use glass, heat, sharp objects, vinegar, or small parts.
2. Wash your hands after every experiment. Even safe kitchen items can get sticky, sour, salty, or messy.
3. Never use fire or heat alone. Only an adult should handle candles, matches, hot water or sharp cutters.
4. Do not taste experiment materials unless a parent or teacher says it is safe.
5. Clean your science station. A good scientist leaves the table cleaner than before.

How to Read Ratings

Time Needed tells you how long it takes.
Difficulty tells you how easy or tricky it is.
Mess Level tells you how much cleaning may be needed.

Science Journal Tip

Keep a notebook of results. Write what you did, what happened, what you think happened, and what you would change next time.

Always ask a parent, teacher, or older helper before starting. Real science is fun, careful, and curious.

Experiment Map

25 EXPERIMENTS

Pick an experiment, gather your things, and turn your home into a mini science lab.

KITCHEN SCIENCE

Science hiding in lemons, milk, soda, eggs and everyday kitchen things

01. Baking Soda Volcano
02. Dancing Raisins in Soda
03. Homemade Butter in a Jar
04. Milk Plastic
05. Rainbow in a Glass
06. Invisible Ink with Lemon Juice
07. Egg in a Bottle

PHYSICS FUN

Forces, sound, light, magnets and motion you can test at home

08. Paper Bridge Strength Test
09. Homemade Compass with a Needle
10. Balloon Rocket on a String
11. Straw Flute
12. Static Electricity Butterfly
13. Spinning Colour Wheel

NATURE & BIOLOGY

Seeds, leaves, ants, clouds and tiny living-world clues

14. Grow a Bean in a Bag
15. Make Your Own Fossil Print
16. Potato Battery
17. Leaf Chromatography
18. Cloud in a Jar
19. Ant Farm Observation Box

MIND-BENDING TRICKS

Science tricks that make your brain say, Wait, what?

20. Non-Newtonian Fluid - Oobleck
21. Disappearing Coin
22. Self-Inflating Balloon
23. Water Walking
24. Pepper and Soap Trick
25. Homemade Periscope

Mini Challenge

After each experiment, give it a star rating and write one thing you discovered. The best scientists are the best noticers.

SECTION

KITCHEN SCIENCE

Experiments 1-7

Science hiding in lemons, milk, soda, eggs and everyday kitchen things

Hands-on experiments, bright ideas, and real science fun!

Baking Soda Volcano

THE WOW FACTOR

A cup suddenly erupts like a mini volcano right on your table!

TIME NEEDED	DIFFICULTY	MESS LEVEL
10 minutes	Easy	Medium

WHAT YOU NEED

- 2 tablespoons baking soda
- 1/2 cup vinegar
- Small cup or plastic bottle
- Tray or plate
- Red or orange food colour
- Dish soap
- Spoon

THE SCIENCE BEHIND IT

Baking soda and vinegar react when they mix. This reaction makes carbon dioxide gas, which creates lots of bubbles. The bubbles push the liquid upward and make the eruption.

STEP-BY-STEP

1. Place the cup or bottle on a tray.
2. Add baking soda into the cup.
3. Add a few drops of food colour.
4. Add one small squirt of dish soap.
5. Slowly pour vinegar into the cup.
6. Watch the bubbly eruption rise and flow out.
7. Try again with more or less vinegar.
8. Clean the tray after the fizzing stops.

SCIENCE CONCEPT LEARNED

Chemical Reaction

TRY THIS TWIST!

Build a paper or clay mountain around the bottle and make it look like a real volcano.

THINK ABOUT IT

What changes if you add more dish soap but the same amount of vinegar?

Science Journal Prompt

Draw what you saw. Then write one sentence starting with: "I think this happened because..."

Dancing Raisins in Soda

THE WOW FACTOR

Raisins sink, rise, spin, and dance without anyone touching them!

TIME NEEDED	DIFFICULTY	MESS LEVEL
8 minutes	Easy	Low

WHAT YOU NEED

- Clear glass
- Soda or sparkling water
- 6-8 raisins
- Spoon
- Plain water for comparison

THE SCIENCE BEHIND IT

Soda has tiny carbon dioxide bubbles inside it. These bubbles stick to the wrinkly raisin skin and lift the raisins upward. When the bubbles pop at the top, the raisins sink again.

STEP-BY-STEP

1. Fill a clear glass halfway with soda.
2. Drop 6-8 raisins into the glass.
3. Watch carefully for bubbles sticking to them.
4. Wait for the raisins to rise.
5. Notice what happens when they reach the top.
6. Try the same thing in plain water.
7. Compare both glasses.

SCIENCE CONCEPT LEARNED

Buoyancy and Gas Bubbles

TRY THIS TWIST!

Try small pieces of peanut, chana, or pasta and see which one dances best.

THINK ABOUT IT

Why do you think wrinkly raisins work better than smooth grapes?

Science Journal Prompt

Draw what you saw. Then write one sentence starting with: "I think this happened because..."

Buoyancy and Gas Bubbles

Homemade Butter in a Jar

THE WOW FACTOR

You can turn cream into butter just by shaking it!

TIME NEEDED	DIFFICULTY	MESS LEVEL
15-20 minutes	Easy	Low

WHAT YOU NEED

- Fresh cream or malai
- Clean glass jar with tight lid
- Pinch of salt
- Bowl
- Spoon
- Bread or roti for tasting after adult approval

THE SCIENCE BEHIND IT

Cream contains tiny fat droplets. When you shake the jar, the droplets bump into each other and join together. After enough shaking, they separate from the liquid and become butter.

STEP-BY-STEP

1. Pour cream or malai into a clean jar.
2. Fill only half the jar so there is space to shake.
3. Close the lid tightly.
4. Shake the jar strongly for several minutes.
5. Stop when yellowish butter lumps form.
6. Pour out the watery liquid into a bowl.
7. Add a pinch of salt to the butter.
8. Spread it on bread or roti if an adult says it is safe.

SCIENCE CONCEPT LEARNED

Separation of Fat

TRY THIS TWIST!

Shake one jar slowly and one jar quickly. Which one becomes butter first?

THINK ABOUT IT

Why does the jar need empty space inside for shaking?

Science Journal Prompt

Draw what you saw. Then write one sentence starting with: "I think this happened because..."

Milk Plastic

THE WOW FACTOR

Warm milk can turn into a soft solid that you can shape!

TIME NEEDED	DIFFICULTY	MESS LEVEL
25 minutes	Medium	Medium

WHAT YOU NEED

- 1 cup milk
- 2 tablespoons vinegar or nimbu juice
- Saucepan
- Spoon
- Strainer or clean cloth
- Paper towel
- Adult helper for heating

THE SCIENCE BEHIND IT

Milk has a protein called casein. When vinegar or lemon juice is added to warm milk, the casein clumps together. These clumps can be pressed into a small solid shape.

STEP-BY-STEP

1. Ask an adult to warm the milk. Do not boil it hard.
2. Pour the warm milk into a bowl.
3. Add vinegar or nimbu juice and stir gently.
4. Watch white clumps form in the milk.
5. Strain the mixture through a cloth or strainer.
6. Press the clumps gently with a paper towel.
7. Shape the soft solid into a small button or bead.
8. Let it dry for a day.

SCIENCE CONCEPT LEARNED

Protein Coagulation

TRY THIS TWIST!

Add food colour before shaping and make colourful beads.

THINK ABOUT IT

Why do you think the milk changes only after vinegar or lemon juice is added?

Science Journal Prompt

Draw what you saw. Then write one sentence starting with: "I think this happened because..."

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