POLYMER SCIENCE LABS

Looking for hands-on chemistry activities that go beyond baking soda and vinegar?

These polymer science investigations help kids explore stretchy, squishy, flexible, and absorbent materials while learning how scientists design and test everyday products.

SLIME SCIENCE
Explore stretchiness, elasticity, and polymer chains.

PLASTIC MILK
Create a natural polymer from milk protein.

BIOPLASTIC
Make a biodegradable plastic from starch.

PENCIL THROUGH A BAG
Discover the surprising properties of plastic polymers.

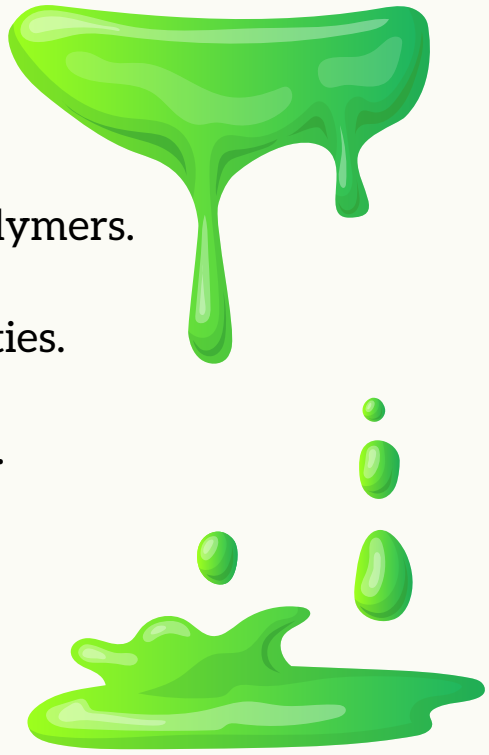
GELATIN SLIME
Investigate food polymers and material properties.

FAKE SNOT
Observe how polymers create stretchy strands.

GUMMY BEAR GROWTH LAB
Explore absorption and polymer networks.

BOUNCY BALL CHALLENGE
Test elasticity and polymer cross-linking.

POLYMER HUNT
Identify polymers hiding in everyday objects.



POLYMER SCIENCE LABS

Explore how polymers stretch, bend, bounce with these hands-on investigations that introduce chemistry and materials science using simple supplies and memorable experiments!

DAY 1 — SLIME SCIENCE

Polymers, elasticity, non-Newtonian behavior, material properties

Compare how slime behaves like both a liquid and a solid.

DAY 2 — PLASTIC MILK

Natural polymers, chemical reactions, materials science

Mix milk and vinegar to separate casein protein and create a simple polymer material.

DAY 3 — PENCIL THROUGH A BAG

Polymer chains, flexibility, engineering materials

Push sharpened pencils through a water-filled plastic bag and observe why the water doesn't spill out.

DAY 4 — GUMMY BEAR GROWTH LAB

Polymers, absorption, osmosis, material changes

Place gummy bears in water and compare changes in size, shape, and texture after 24 hours.

DAY 5 — BIOPLASTIC LAB

Biopolymers, sustainability, materials engineering

Create a biodegradable plastic from starch.

THINK LIKE A SCIENTIST

Scientists learn by asking questions, testing ideas, observing changes, and recording results. What new chemistry discovery will you make next?

USE YOUR SCIENCE INVESTIGATION PAGES

Record:

- **Predictions**
- **Observations**
- **Drawings**
- **Results**
- **Questions**

POLYMER SCIENCE CHALLENGE

Which material:
Stretched the most?
Returned to shape best?
Absorbed the most water?
Felt strongest?
Felt most flexible?
Record your observations and decide which polymer had the most interesting properties.

5 DAY PLAN

Polymer Science Mini Lab

What Is a Polymer?

A polymer is a material made of many small repeating parts connected together into long chains.

These chains give polymers special properties that allow them to stretch, bend, bounce, squish, or return to shape.

Polymers are found in many everyday materials, including slime, rubber bands, balloons, plastic containers, and clothing.

Natural Polymers

- Wool
- Silk
- DNA
- Natural Rubber

Synthetic Polymers

- Plastic
- Nylon
- Polyester
- Slime

Polymer Hunt:
Can you find polymers around you?

□ Something stretchy
□ Something squishy
□ Something made of plastic
□ Something made of rubber
□ Something in the kitchen
□ Something you wear

Draw or Write a Polymer You Found Today

Polymer Investigation Lab

Question: Which polymer material stretches, squishes, or bounces the most?

Make a Prediction
I think _____ will show the most polymer properties

because _____.

Material: What Happened?

Stretchy? Squishy? Bouncy? Returned to Shape?

Rubber Band:

Balloon:

Sponge:

Slime:

What Did You Observe?

Which material stretched the farthest?

Which material returned to its shape best?

Which material felt the most flexible?

Conclusion

What do these materials have in common?

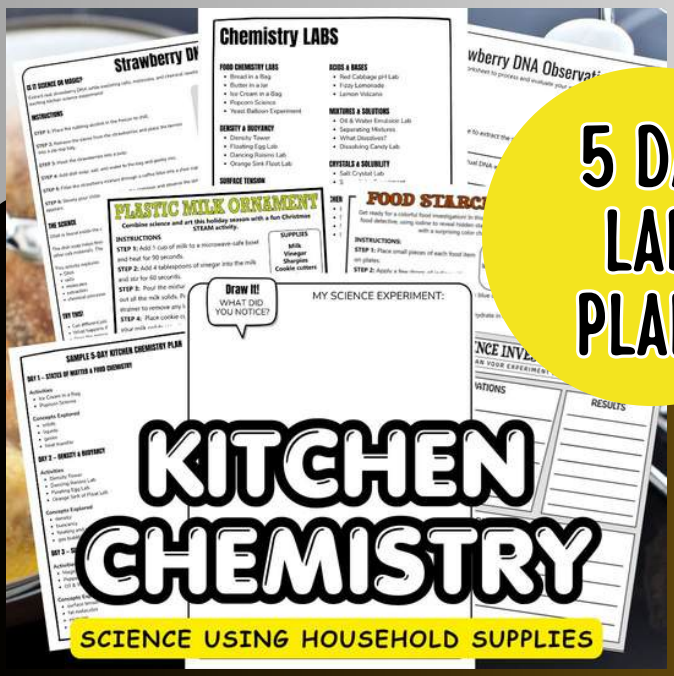
Which material showed the strongest polymer properties? Why?

NEXT STEPS

LITTLE BINS FOR LITTLE HANDS

IF YOU LIKED THIS ACTIVITY, TRY THESE PROJECTS:

- STRAWBERRY DNA LAB
- CABBAGE PH LAB
- PLASTIC MILK LAB



5 DAY LAB PLAN!

TURN THIS INTO A FULL KITCHEN CHEMISTRY UNIT!

KITCHEN CHEMISTRY LABS

EVERY PACK EVERY PRINTABLE

Get the ALL ACCESS PASS!

Little Bins for Little Hands helps make hands-on learning easy for families and educators by providing simple, engaging science experiments, STEM activities, art projects, and printable resources that encourage curiosity, creativity, and learning through play.