

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

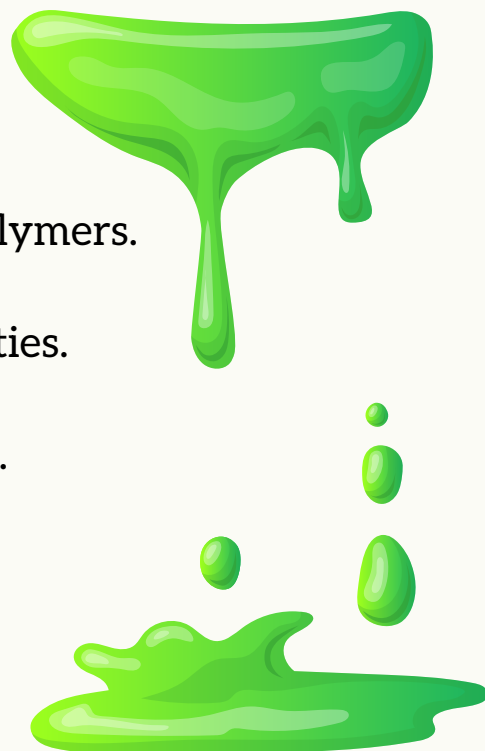
Explore absorption and polymer networks.

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?

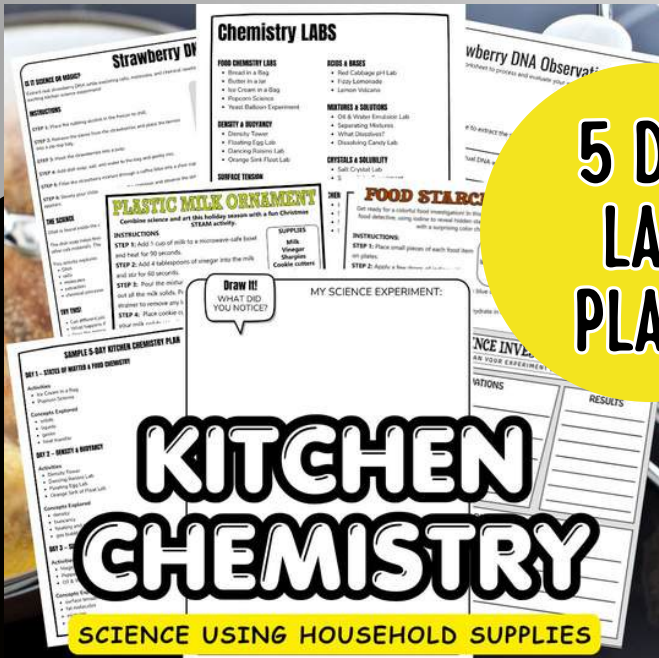
NEXT STEPS



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!



ALL-ACCESS science & Art Pass

FOUNDATIONS OF SCIENCE: MONTH 2

Theme: Exploring Fall Science From Migration to Weather

Audience: Grades 4-6 Science Teachers or Classroom Teachers

Purpose: This month we'll explore how the changing seasons affect weather, plants, animals, and even the ground beneath our feet.

WEEK 1: Weather & Seasons

Theme: How does weather change, and why do we see seasons?

WEEK 2: Plants in Fall

Theme: What happens to plants as seasons change?

WEEK 3: Animals in Fall

Theme: How do animals prepare for winter?

WEEK 4: Earth & Rocks

Theme: What's under our feet? Exploring soil and rocks.

FOUNDATIONS OF ART: MONTH 2

Theme: Imagines the 7 elements of art with various art styles and process-based projects.

Audience: Grades 4-6 Art Teachers or Classroom Teachers

Purpose: Explore color concepts, explore basic materials, build sketchbook habits.

WEEK 1: Color & Space - "Pointillism Fall Trees"

Artist: Georges Seurat

WEEK 2: Shape & Value - "Castle and Sun Collage"

Artist: Paul Klee

WEEK 3: Repetition & Form - "Polka Dot Pumpkins"

Artist: Yayoi Kusama

WEEK 4: Storytelling & Texture - "Story Quilts"

Artist: Faith Ringgold

- ✓ Never Expires!
- ✓ Monthly Science & Art Lessons!
- ✓ All Our Packs & Printables!



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.