

Overview

	Topic	Read	Watch	Activity	Challenge
Monday	What is Chemistry? / Scientific Method	RCE: Intro, Chapter 1, (pg 4 “What is the scientific method) Who was Marie Curie? - Chs 1 & 2	Youtube Videos linked below	Scientific method unscramble	Vinegar and Baking Soda PLUS ? (Scientific method trials)
Tuesday	Elements/ States of Matter	RCE: Chapter 3 introduction Who was Marie Curie? - Chs 3 & 4	Youtube Videos linked below	Periodic table color coding	Eggshell geodes
Wednesday	States of Matter/Gases	RCE: Chapter 4 introduction Who was Marie Curie? - Chs 5 & 6	Youtube Videos linked below	Representing particles in states of matter	Backward Balloon
Thursday	Chemical Reactions	RCE: Chapter 5 introduction Who was Marie Curie? - Chs 7 & 8	Youtube Videos linked below	Chemical and physical changes	Soda Solids or Elephant Toothpaste
Friday	Polymers	RCE: Chapter 6 introduction Who was Marie Curie? - Chs 9 & 10	Youtube Videos linked below	Linked polymers drawing	Slime

Books:

(No books in particular are necessary, but these are the ones we used)

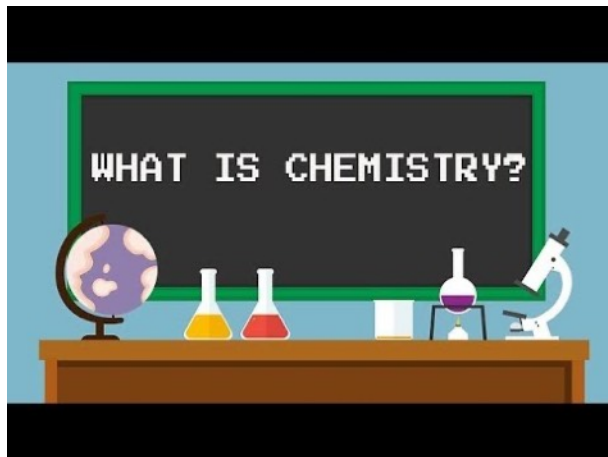
- [Real Chemistry Experiments: 40 Exciting STEAM Activities for Kids](#)
- [Who Was Marie Curie?](#)
- Variety of kids chemistry books from library

Supplies:

- Chemistry Journal Printable for each student
- Vinegar
- Baking soda
- Eggs
- Salt
- Alum
- Epsom salt
- Borax
- Food coloring
- Balloons
- Plastic bottle
- Variety of sodas in plastic bottles
- Whole milk
- White glue
- Hydrogen peroxide
- Dish soap
- Yeast

DAY ONE

Video 1 - "What is Chemistry?"



Video 2 - "Importance of Chemistry in Life, Everyday Uses"



Video 3 - "The Scientific Method"



Activity:

Scientific method scramble

Did you know that there is no one set list of steps for the scientific method? A quick google search will show a bunch of different paths a scientist can take. The one given here is just one option!

Cut out steps of the scientific method and give them to the student out of order. Paste into journal in the correct order. This activity is located in the chemistry journal.

Experiment/Challenge:

Baking soda and vinegar PLUS ??

We've all done the baking soda and vinegar experiment, but for this scientific method practice, let's add some more. Have your chemist choose an additional material to add to the baking soda and vinegar (soap, salt, sugar, oil, etc). This is a good time to practice using only one variable. Have them make their guesses and carry out their experiments. Another variation could be to test the reaction in different environments - cold or hot, in a bottle or in a bowl, etc. Be creative!

DAY TWO

Video 1 - "What are Atoms?"



Video 2 - "What is Matter?"



Video 3 - "What are Chemicals?"



Activity:

Periodic table color coding

This is just an introduction to the concept of the periodic table of elements. Unless you have an older or more advanced child there is no need to try and figure out what everything exactly means! Just have fun with it!

Experiment/Challenge:

Eggshell Geodes

All the main states of matter are represented in this experiment!

Page 30 in Real Chemistry Experiments or see the following link:

<https://littlebinsforlittlehands.com/eggshell-geodes-crystal-experiment/>

Or for an edible alternative: <https://littlebinsforlittlehands.com/grow-sugar-crystals-rock-candy/>

You could also make some popsicles!

DAY THREE

Video 1 - "What is a gas?"



Video 2 - "Exploring Air and Air Pressure"



Video 3 - The Particle Nature of Matter
(This video is a little more advanced, but I like the visuals)



Activity:

States of Matter Visual

Use a marker to draw dots representing the particles in the different states of matter. See video 3 for more information on how to complete this activity.

Experiment/Challenge:

Backward Balloon

There are also lots of other balloon and air pressure experiments online!

Page 44 in Real Chemistry Experiments or see the following link:

<https://playingwithrain.com/hot-cold-balloon-experiment/>

DAY FOUR

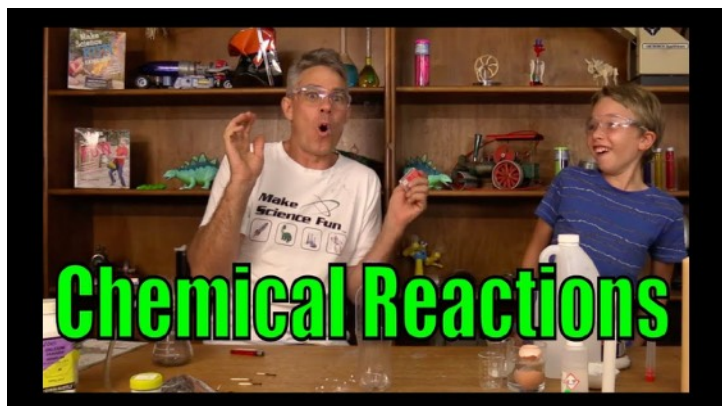
Video 1 - "Introduction to Chemical Reactions "



Video 2 - "What is a chemical reaction?"



Video 3 - What are chemical reactions? (Examples)



Activity:

Physical or Chemical Change?

Draw an example of a physical change (something is physically changing but the substance stays the same) and a chemical reaction (a new substance is being formed). See the videos linked above for examples.

Experiment/Challenge:

Soda Solids

Page 75 in Real Chemistry Experiments or see the following link:

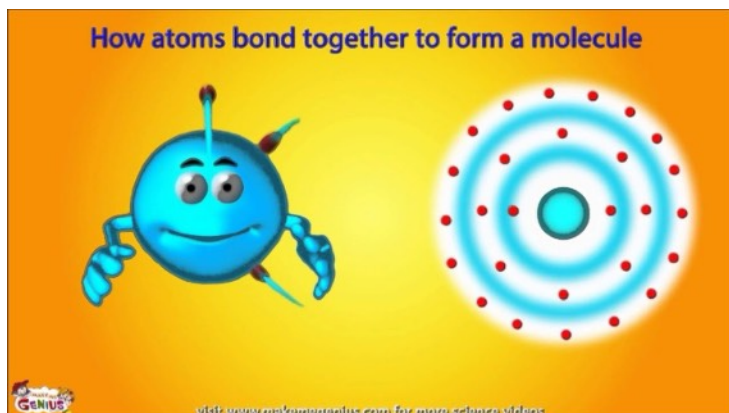
<https://science.wonderhowto.com/news/what-happens-when-you-mix-coca-cola-and-milk-0156017/> (Try with a variety of soda)

Elephant Toothpaste

<https://sciencebob.com/fantastic-foamy-fountain/>

DAY FIVE

Video 1 - “How are molecules formed? ”



Video 2 - “Slime and Polymers”



Video 3 - Simple Science: Polymers



Activity:

Simple polymer chain

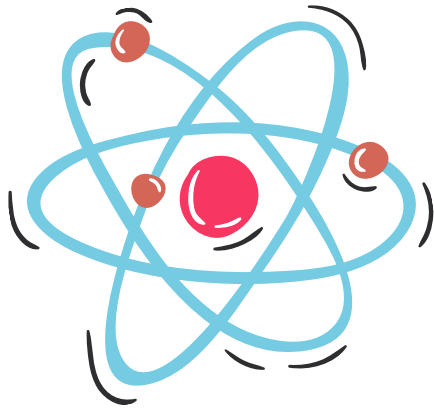
Draw a chain to make an example of a simple polymer. Older students could also look up examples of branched and cross linked polymers and draw those as well.

Experiment/Challenge:

Best Slime Ever

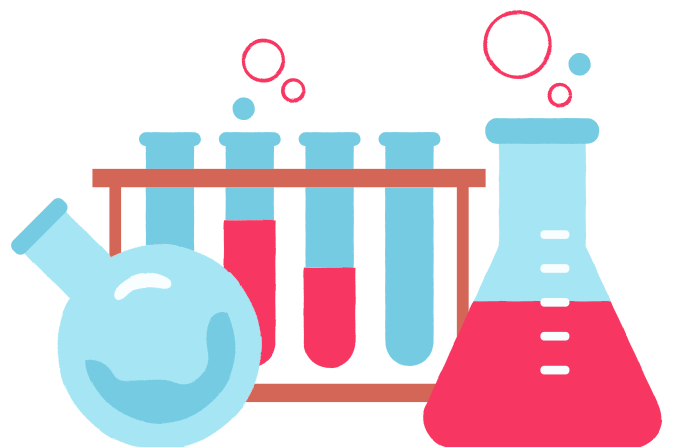
Page 94 in Real Chemistry Experiments or see the following link:

<https://littlebinsforlittlehands.com/how-to-make-borax-slime-easy/>



My Chemistry Journal

Name

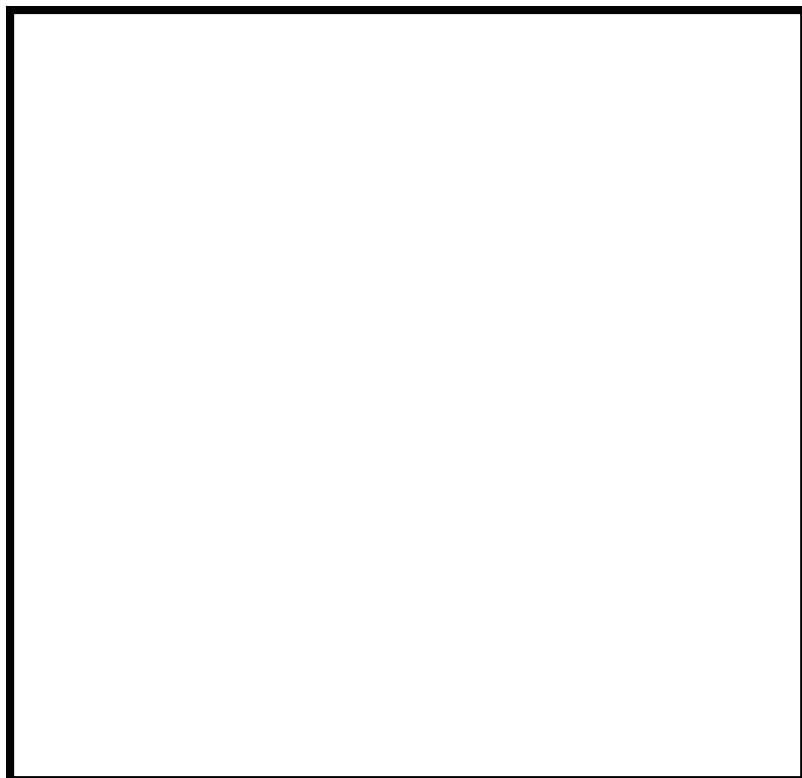


Biography of a Famous Chemist

Name:

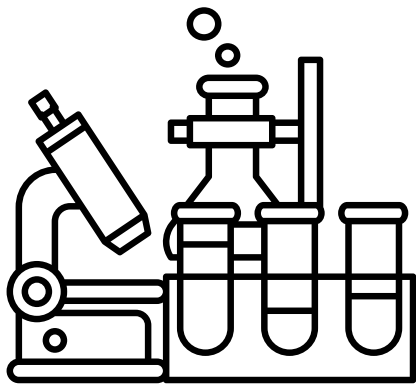
Dates of life:

Source(s) of info:



Paste or draw a portrait

What I want to remember:



My Scientific Method

1.

2.

3.

4.

5.

6.

7.

Scientific method

Ask a question

Research the topic

Create a hypothesis

Test your hypothesis

Study the data

Draw a conclusion

Share your findings

Keep this page separate from the journal. Cut out steps of the scientific method and give them to the student out of order. Paste into journal in the correct order.

Investigation number _____

My question:

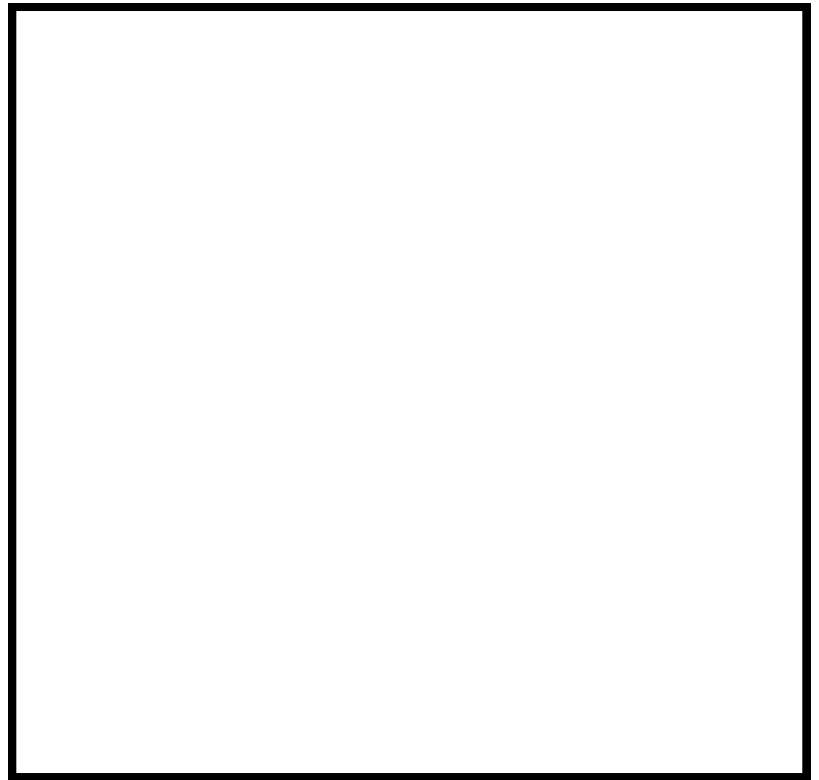
Something I know or researched:

My hypothesis:

Plan for testing:

Data:

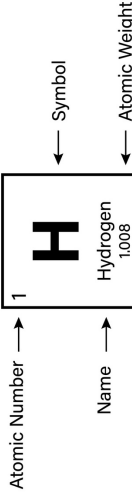
Conclusion:



Sketch of my experiment

Periodic Table of the Elements

1 IA	2 IIA											13 IIIA	14 IVA	15 VA	16 VIA	17 VIIA	18 VIIIA
1 H Hydrogen 1.008	3 Li Lithium 6.94	4 Be Beryllium 9.0121831	5 B Boron 10.81	6 C Carbon 12.011	7 N Nitrogen 14.007	8 O Oxygen 15.999	9 F Fluorine 18.998403163	10 Ne Neon 20.1797	11 Na Sodium 22.98976928	12 Mg Magnesium 24.305	13 Al Aluminum 26.9815385	14 Si Silicon 28.085	15 P Phosphorus 30.973761998	16 S Sulfur 32.06	17 Cl Chlorine 35.45	18 Ar Argon 39.948	
19 K Potassium 39.0983	20 Ca Calcium 40.078	21 Sc Scandium 44.955908	22 Ti Titanium 47.867	23 V Vanadium 50.9415	24 Cr Chromium 51.9961	25 Mn Manganese 54.938044	26 Fe Iron 55.845	27 Co Cobalt 58.933194	28 Ni Nickel 58.6934	29 Cu Copper 63.546	30 Zn Zinc 65.38	31 Ga Gallium 69.723	32 Ge Germanium 72.630	33 As Arsenic 74.921595	34 Se Selenium 78.971	35 Br Bromine 79.904	36 Kr Krypton 83.798
37 Rb Rubidium 85.4678	38 Sr Strontium 87.62	39 Y Yttrium 88.90584	40 Zr Zirconium 91.224	41 Nb Niobium 92.90637	42 Mo Molybdenum 95.95	43 Tc Technetium (98)	44 Ru Ruthenium 101.07	45 Rh Rhodium 102.90550	46 Pd Palladium 106.42	47 Ag Silver 107.8682	48 Cd Cadmium 112.414	49 In Indium 114.818	50 Sn Tin 118.710	51 Sb Antimony 121.760	52 Te Tellurium 127.60	53 I Iodine 126.90447	54 Xe Xenon 131.293
55 Cs Caesium 132.90545196	56 Ba Barium 137.327	57 - 71 Lanthanoids	72 Hf Hafnium 178.49	73 Ta Tantalum 180.94788	74 W Tungsten 183.84	75 Re Rhenium 186.207	76 Os Osmium 190.23	77 Ir Iridium 192.217	78 Pt Platinum 195.084	79 Au Gold 196.966569	80 Hg Mercury 200.592	81 Tl Thallium 204.38	82 Pb Lead 207.2	83 Bi Bismuth 208.98040	84 Po Polonium (209)	85 At Astatine (210)	86 Rn Radon (222)
87 Fr Francium (223)	88 Ra Radium (226)	89 - 103 Actinoids	104 Rf Rutherfordium (267)	105 Db Dubnium (268)	106 Sg Seaborgium (269)	107 Bh Bohrium (270)	108 Hs Hassium (269)	109 Mt Meitnerium (278)	110 Ds Darmstadtium (281)	111 Rg Roentgenium (282)	112 Cn Copernicium (285)	113 Nh Nihonium (286)	114 Fl Flerovium (289)	115 Mc Moscovium (289)	116 Lv Livermorium (293)	117 Ts Tennessine (294)	118 Og Oganesson (294)



- Non-Metals
- Alkali Metals
- Alkaline Earth Metals
- Transition Metals
- Post-Transition Metals
- Metalloid
- Halogen
- Noble Gas
- Actinide
- Lanthanide
- Unknown

57 La Lanthanum 138.90547	58 Ce Cerium 140.116	59 Pr Praseodymium 140.90766	60 Nd Neodymium 144.242	61 Pm Promethium (145)	62 Sm Samarium 150.36	63 Eu Europium 151.964	64 Gd Gadolinium 157.25	65 Tb Terbium 158.92535	66 Dy Dysprosium 162.500	67 Ho Holmium 164.93033	68 Er Erbium 167.259	69 Tm Thulium 168.93422	70 Yb Ytterbium 173.045	71 Lu Lutetium 174.9668
89 Ac Actinium (227)	90 Th Thorium 232.0377	91 Pa Protactinium 231.03588	92 U Uranium 238.02891	93 Np Neptunium (237)	94 Pu Plutonium (244)	95 Am Americium (243)	96 Cm Curium (247)	97 Bk Berkelium (247)	98 Cf Californium (251)	99 Es Einsteinium (252)	100 Fm Fermium (257)	101 Md Mendelevium (258)	102 No Nobelium (259)	103 Lr Lawrencium (260)

PERIODIC TABLE OF THE ELEMENTS

Keep this page out of the student's journal and use to create their own color coded periodic table.

1 H HYDROGEN 1.0079	2 He HELIUM 4.0026																																																																																																			
3 Li LITHIUM 6.941	4 Be BERYLLIUM 9.0122	5 B BORON 10.811	6 C CARBON 12.011	7 N NITROGEN 14.007	8 O OXYGEN 15.999	9 F FLUORINE 18.998	10 Ne NEON 20.1797	11 Na SODIUM 22.989	12 Mg MAGNESIUM 24.305	13 Al ALUMINIUM 26.981	14 Si SILICON 28.085	15 P PHOSPHORUS 30.974	16 S SULFUR 32.066	17 Cl CHLORINE 35.453	18 Ar ARGON 39.948	19 K POTASSIUM 39.098	20 Ca CALCIUM 40.078	21 Sc SCANDIUM 44.955	22 Ti TITANIUM 47.867	23 V VANADIUM 50.9415	24 Cr CHROMIUM 51.9961	25 Mn MANGANESE 54.938	26 Fe IRON 55.845	27 Co COBALT 58.933	28 Ni NICKEL 58.6934	29 Cu COPPER 63.546	30 Zn ZINC 65.38	31 Ga GALLIUM 69.723	32 Ge GERMANIUM 72.63	33 As ARSENIC 74.921	34 Se SELENIUM 78.971	35 Br BROMINE 79.904	36 Kr KRYPTON 83.798	37 Rb RUBIDIUM 85.467	38 Sr STRONTIUM 87.62	39 Y YTRIUM 88.9058	40 Zr ZIRCONIUM 91.224	41 Nb NIOBIUM 92.9063	42 Mo MOLYBDENUM 95.95	43 Tc TECHNETIUM (98)	44 Ru RUTHENIUM 101.07	45 Rh RHODIUM 102.90	46 Pd PALLADIUM 106.42	47 Ag SILVER 107.8682	48 Cd CADMIUM 112.414	49 In INDIUM 114.818	50 Sn TIN 118.710	51 Sb ANTIMONY 121.760	52 Te TELLURIUM 127.60	53 I IODINE 126.90	54 Xe XENON 131.293	55 Cs CAESIUM 132.905	56 Ba BARIUM 137.327	57 La LANTHANUM 138.90	58 Ce CERIUM 140.116	59 Pr PRASEODYMIUM 140.90	60 Nd NEODYMIUM 144.242	61 Pm PROMETHIUM (145)	62 Sm SAMARIUM 150.36	63 Eu EUROPIUM 151.964	64 Gd GADOLINIUM 157.25	65 Tb TERBIUM 158.92	66 Dy DYSPROSIUM 162.500	67 Ho HOLMIUM 164.93	68 Er ERBIUM 167.259	69 Tm THULIUM 168.93	70 Yb YTTERIUM 173.054	71 Lu LUTETIUM 174.9668	72 Hf HAFNIUM 178.49	73 Ta TANTALUM 180.94	74 W TUNGSTEN 183.84	75 Re RHENIUM 186.207	76 Os OSMIUM 190.23	77 Ir IRIDIUM 192.217	78 Pt PLATINUM 195.084	79 Au GOLD 196.96	80 Hg MERCURY 200.59	81 Tl THALLIUM 204.38	82 Pb LEAD 207.2	83 Bi BISMUTH 208.98	84 Po POLONIUM (209)	85 At ASTATINE (210)	86 Rn RADON (222)	87 Fr FRANCIUM (223)	88 Ra RADIUM (226)	89 Ac ACTINIUM (227)	90 Th THORIUM 232.0377	91 Pa PROTACTINIUM 231.03	92 U URANIUM 238.02	93 Np NEPTUNIUM (237)	94 Pu PLUTONIUM (244)	95 Am AMERICIUM (243)	96 Cm CURIUM (247)	97 Bk BERKELIUM (247)	98 Cf CALIFORNIUM (251)	99 Es EINSTEINIUM (252)	100 Fm FERMIUM (257)	101 Md MENDELEVIUM (258)	102 No NOBELIUM (259)	103 Lr LAWRENCIUM (262)

NON-METALS
 POST-TRANSITION METALS
 ACTINIDE
 ALKALI METALS
 METALLOID
 LANTHANIDE
 HALOGEN
 UNKNOWN CHEMICAL PROPERTIES
 TRANSITION METALS
 NOBLE GAS

26
Fe
 IRON
 55.845
 ATOMIC NUMBER — SYMBOL — NAME — ATOMIC WEIGHT —

FOR ELEMENTS WITH NO STABLE ISOTOPES, THE MASS NUMBER OF THE ISOTOPE WITH THE LONGEST HALF-LIFE IS IN PARENTHESES.

57 La LANTHANUM 138.90	58 Ce CERIUM 140.116	59 Pr PRASEODYMIUM 140.90	60 Nd NEODYMIUM 144.242	61 Pm PROMETHIUM (145)	62 Sm SAMARIUM 150.36	63 Eu EUROPIUM 151.964	64 Gd GADOLINIUM 157.25	65 Tb TERBIUM 158.92	66 Dy DYSPROSIUM 162.500	67 Ho HOLMIUM 164.93	68 Er ERBIUM 167.259	69 Tm THULIUM 168.93	70 Yb YTTERIUM 173.054	71 Lu LUTETIUM 174.9668
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* LANTHANIDE SERIES

** ACTINIDE SERIES

Investigation number _____

My question:

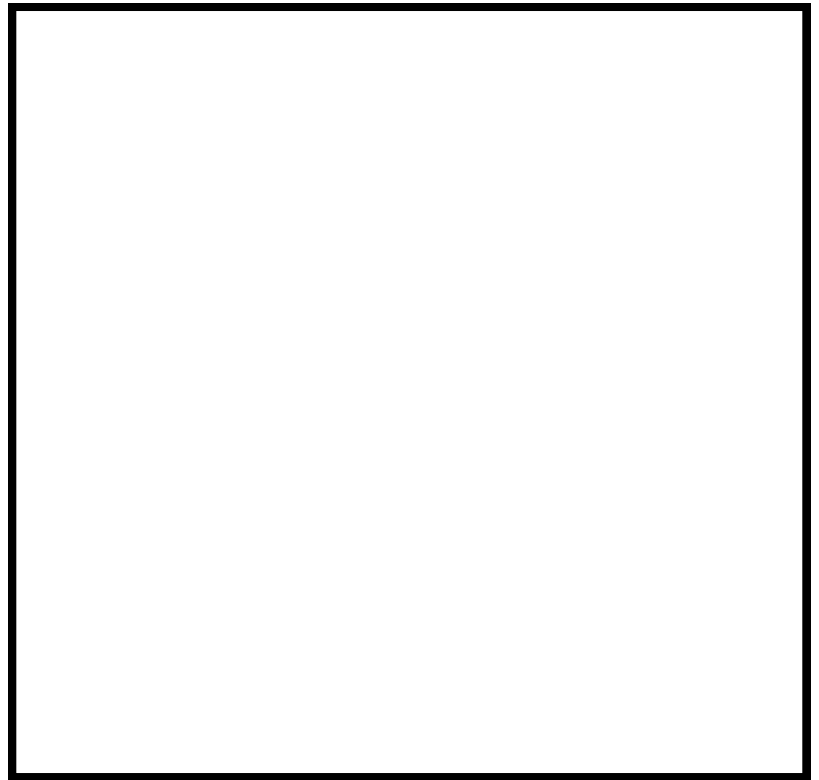
Something I know or researched:

My hypothesis:

Plan for testing:

Data:

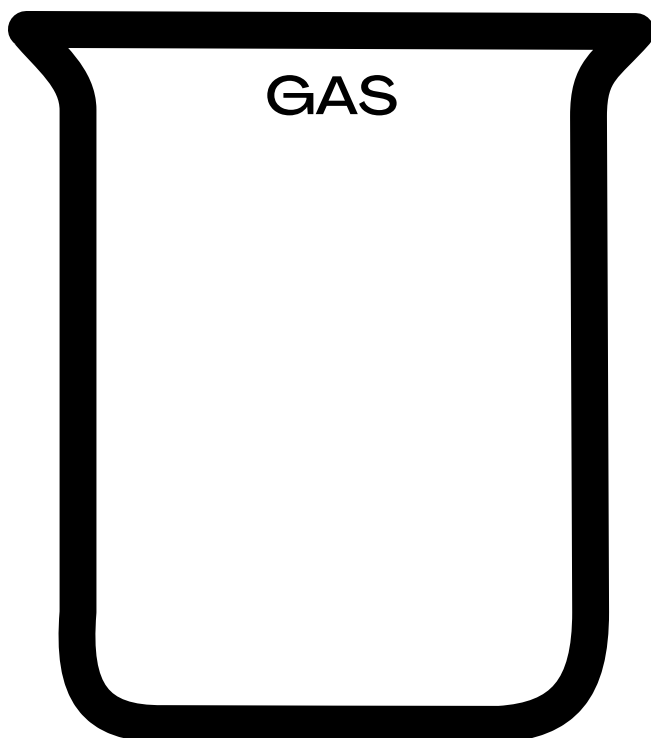
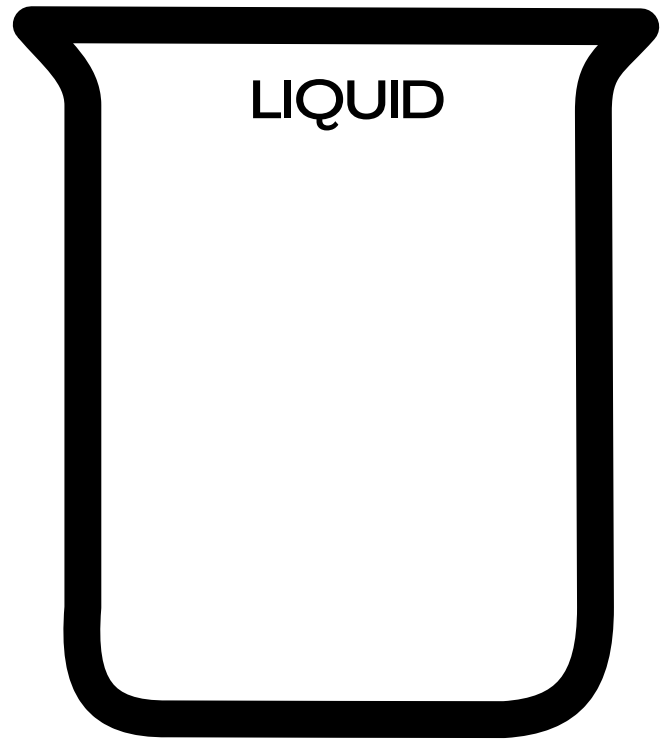
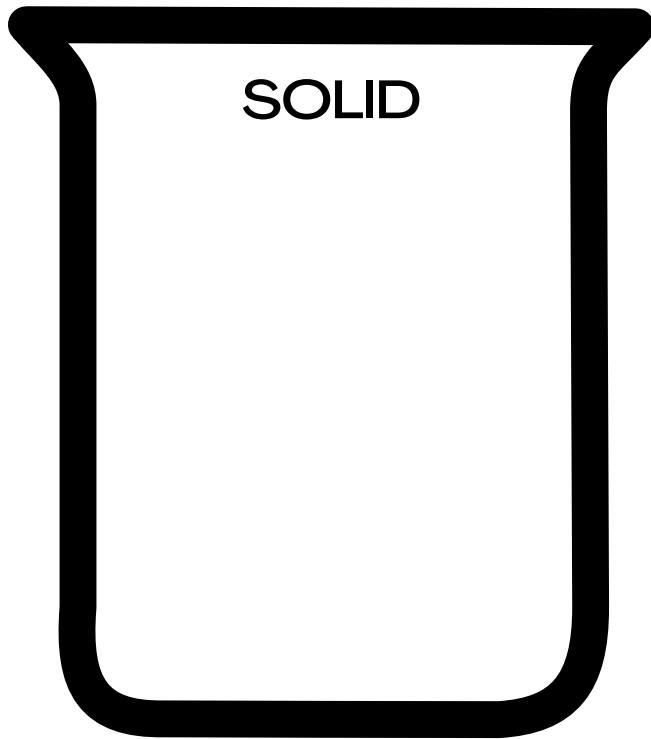
Conclusion:



Sketch of my experiment

States of Matter

Use a marker to draw how the particles are arranged in each state of matter.



Give an example of each state of matter:

Solid: _____

Liquid: _____

Gas: _____

Investigation number _____

My question:

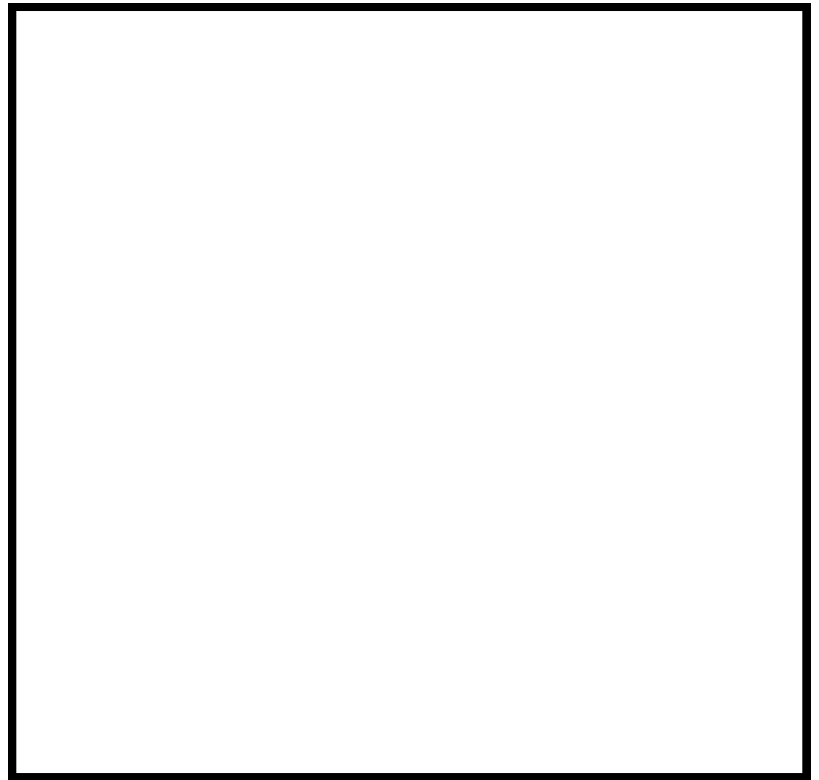
Something I know or researched:

My hypothesis:

Plan for testing:

Data:

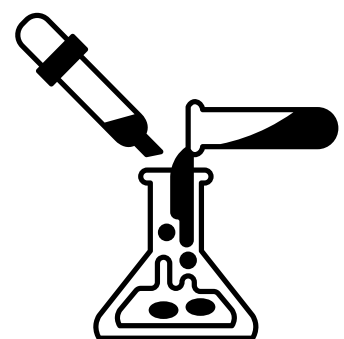
Conclusion:



Sketch of my experiment

Draw an example of a physical change

Draw an example of a chemical change



Investigation number _____

My question:

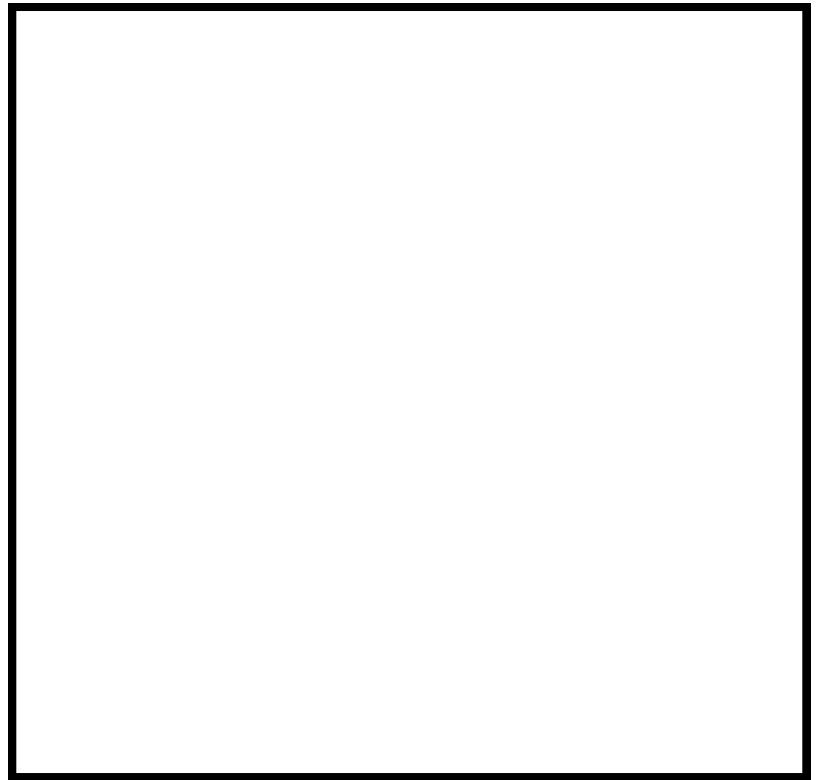
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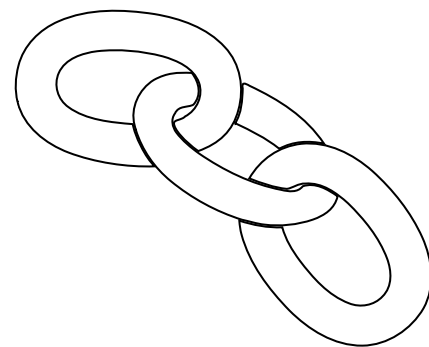
Data:

Conclusion:

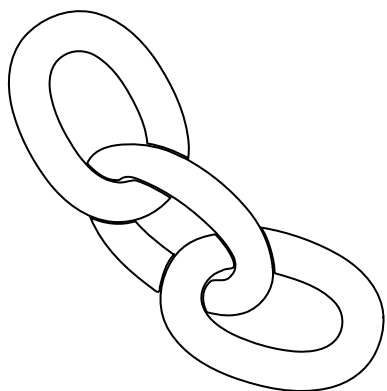


Sketch of my experiment

What is a Polymer?



Draw a long chain of connected circles to demonstrate a simple polymer:



Investigation number _____

My question:

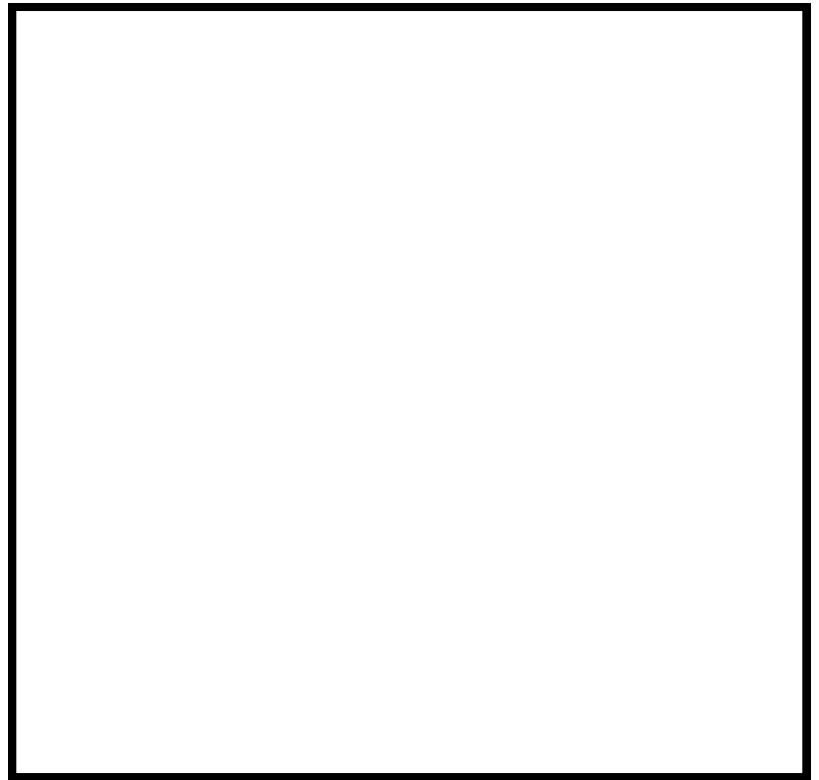
Something I know or researched:

My hypothesis:

Plan for testing:

Data:

Conclusion:



Sketch of my experiment

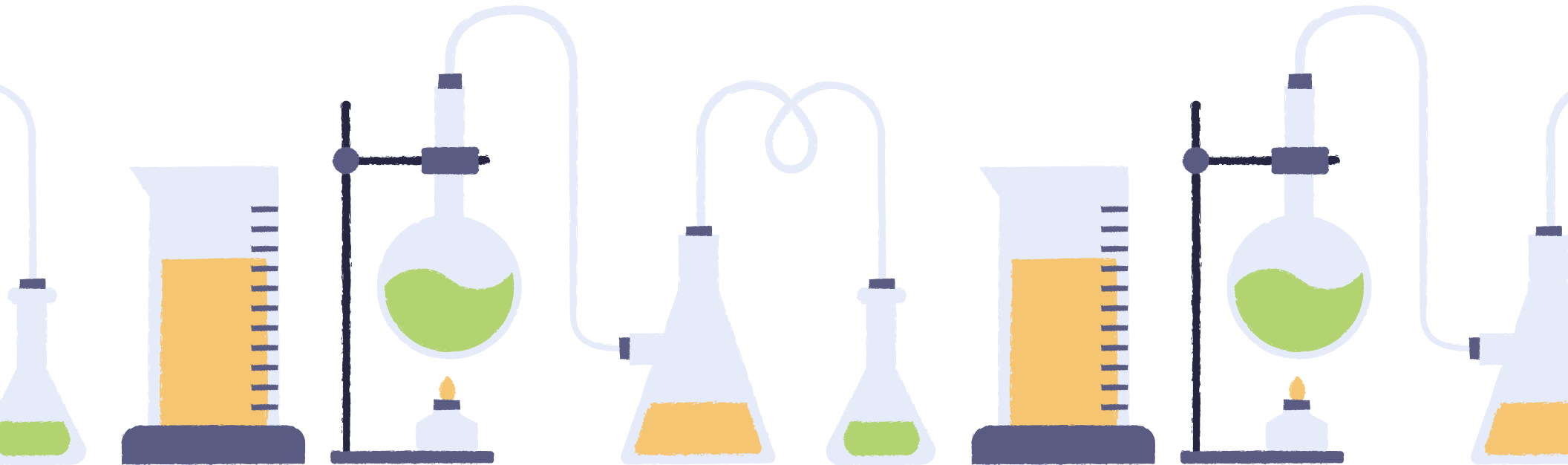
Wwei



com



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miSTR



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