CLASSIC SCIENCE PACK

INTRODUCTION:

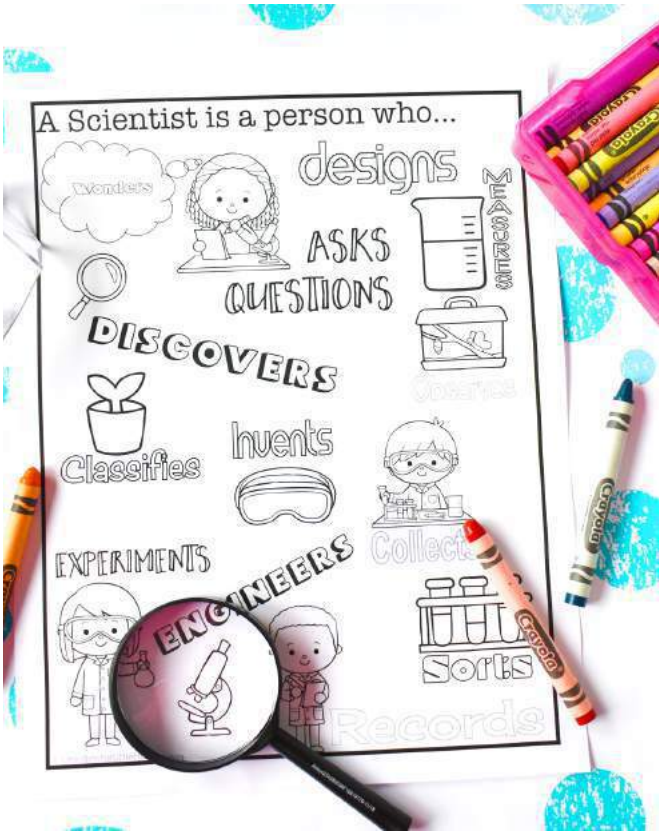
Welcome to your Classic Science Pack filled with 14 great science activities every junior scientist should try! I hope it sparks creativity and curiosity within your young scientists.

In this pack, find a fun selection of my son's favorite, classic science experiments activities. I have added supplies, setup instructions, and simple science information for each activity or experiment. The pack also includes a few fun extras to share with your kids. Perfect for early finishers!

Feel free to use this pack with one junior scientist or a whole group of junior engineers. You may copy activities as many times as you like for your class, but please send your friends to grab their pack instead of sharing files.

~ Thank you!

CLASSIC SCIENCE PACK EXTRAS



SCIENCE: FLOATING EGG EXPERIMENT

SUPPLIES:

2 Tall glasses or jars big enough to hold an egg
Warm water
Salt

PROCESS:

STEP 1: Start by filling one
glass about 2/3 of the way full with water.

Ask the kids what will happen if you carefully drop an egg into the glass of water. Now go ahead and do it!

STEP 2: In the other glass, fill
to the same height with
water. Now stir in 3 tablespoons of salt. Mix well to dissolve the salt! Ask the kids what they think will happen this time and demonstrate!

SCIENCE: FLOATING EGG EXPERIMENT

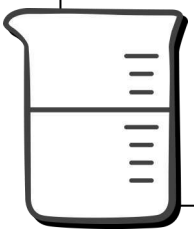
QUICK SCIENCE:

In the first glass, the egg sinks to the bottom because the egg is denser or heavier than the water. Solids and liquids with a higher density will sink.

As the salt dissolves in the water, it adds mass (more weight to the water) making it denser than the egg. The egg floats near the surface because it now has a lower density or is lighter than the water.

Salt Water Density

Materials I Used:



What I think will happen:

What I did:

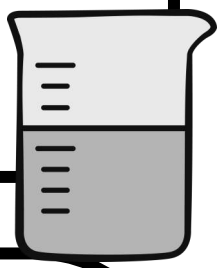
What I Saw:

What Happened:

Draw it:

Floating Egg

Draw what you think will happen.



Draw what you see happen.

SCIENCE: RUBBER EGG EXPERIMENT

SUPPLIES:

Raw Eggs
Household Vinegar
Jar

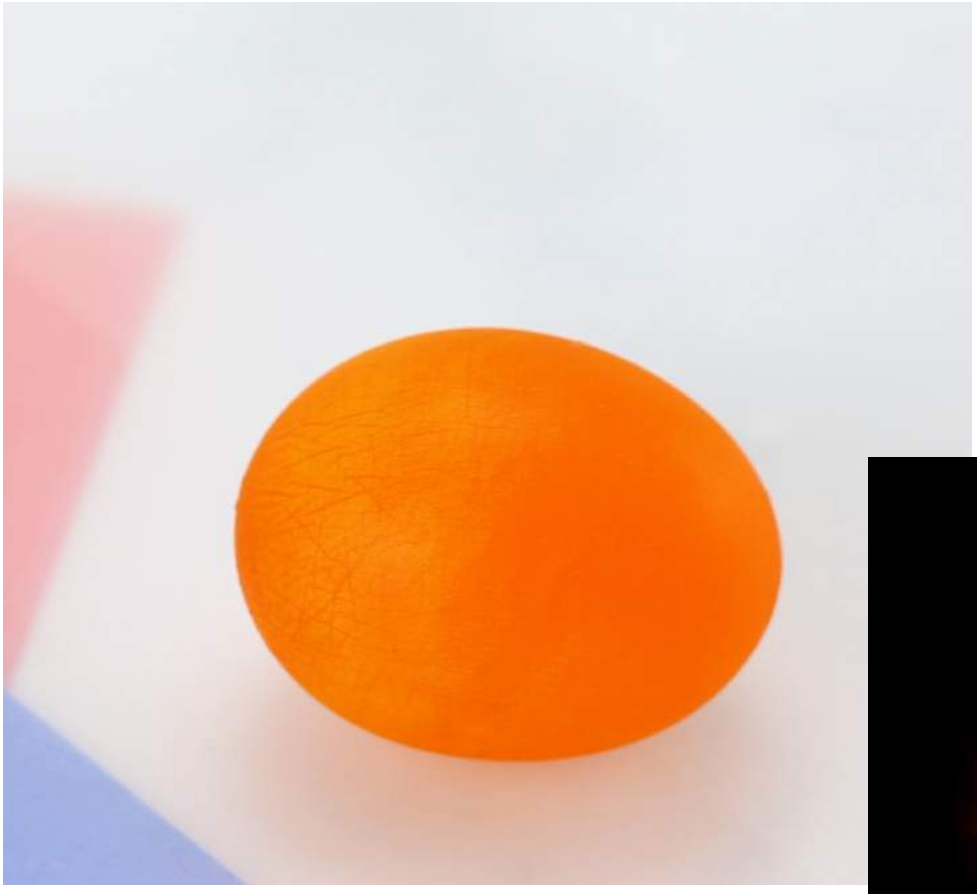
PROCESS:

STEP 1: Place an egg in the jar and cover with vinegar. You can color the vinegar for rainbow colored rubber eggs too!

STEP 2: 24 hours later, drain and refill with vinegar. Set aside and wait 7 days. Alternatively, you can check after 48 hours.

STEP 3: After 7 days, remove the egg and rinse it off. Ours had a layer of brown scum that was easily washed away! The hard outer shell is gone, and the egg white and yolk are surrounded by a thin membrane.

SCIENCE: RUBBER EGG EXPERIMENT



QUICK SCIENCE:

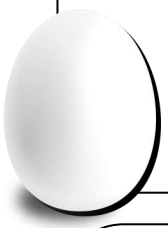
The eggshell gets its hardness from a mineral called calcium carbonate similar to our bones. When you place the egg into the vinegar, you will start to observe bubbles.

These bubbles are a chemical reaction between the acid in the vinegar and the base in the calcium carbonate of the eggshell. When an acid and a base mix they form carbon dioxide which is a gas.

The egg gets larger as it sits in the vinegar. The eggshell dissolves and leaves a soft, bendable, squeeze-able, rubber egg. Does it bounce?
Kids can gently squeeze the egg and bounce the egg. However, be prepared for the eggs to burst! It's also fun to take a flashlight to the egg and observe what you can see!

Rubber Egg

Materials I Used:



What I think will happen:

What I did:

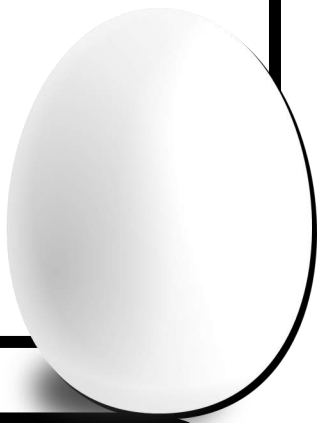
What I Saw:

What Happened:

Draw it:

Rubber Egg

Draw what you think will happen.



Draw what you see happen.

SCIENCE: MILK & VINEGAR EXPERIMENT

SUPPLIES:

1 cup milk
4 tablespoons vinegar
Sharpies
Cookie cutters
Strainer
Paper towels

PROCESS:

STEP 1: Add 1 cup of milk to a microwave safe bowl and heat for 90 seconds.
STEP 2: Mix in 4 tablespoons of vinegar and stir for 60 seconds.
STEP 3: Pour into a strainer and press out all the milk.
STEP 4: Press paper towel into the strainer to remove any remaining milk.
STEP 5: Lay out a piece of paper towel, place a cookie cutter onto the paper towel and press your vinegar milk into the cookie cutter and let sit for 48 hours. Color with markers.

SCIENCE: MILK & VINEGAR EXPERIMENT

QUICK SCIENCE:

This plastic-like substance forms from a chemical reaction between the milk and vinegar.

When the protein in the milk called casein comes in contact with the vinegar, the casein and vinegar do not mix but rather the molecules move around and join forces to make the casein plastic!

The casein becomes these plastic-like blobs that you can strain out and mold into shapes. This is one way of making a simple cheese from milk.

Keep in mind the milk might have a strong smell while you are experimenting with it!

Milk & Vinegar

Draw what you think will happen.

Draw what you see happen.

DIY Milk Plastic

Materials I Used:

What I think will happen:

What I did:

What I Saw:

What Happened:

Draw it:

SCIENCE: MAGIC MILK EXPERIMENT

SUPPLIES:
Whole milk
Food coloring
Dish soap
Cotton swabs

PROCESS:

STEP 1: Start by pouring the milk into a shallow container or dinner plate to about a 1/4 inch in depth.

STEP 2: Next, add food coloring drops to the surface of the milk, but don't stir or mix them into the milk!

STEP 3: Take a cotton swab and dip it into the dish soap. Lightly touch the surface of the milk. Watch what happens!

SCIENCE: MAGIC MILK EXPERIMENT

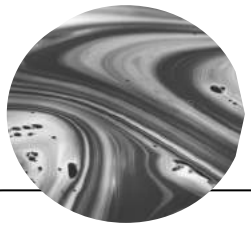
QUICK SCIENCE:

Milk is made up of minerals, proteins, and fats. Proteins and fats are susceptible to changes.

When the dish soap is added to the milk, those molecules run around and try to attach to the fat molecules in the milk. You wouldn't see this without the food coloring! The food coloring looks like fireworks because it's getting bumped around.

Repeat the process with another cotton swab to see if there are any milk fat molecules the soap hasn't found!

*Experiment with different milk fat percentages or different types of milk such as almond milk.



Magic Milk

Materials I Used:

What I think will happen:

What I did:

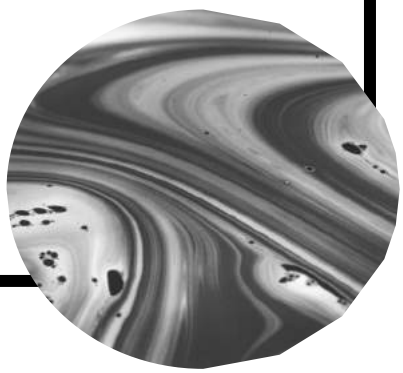
What I Saw:

What Happened:

Draw it:

Magic Milk

Draw what you think will happen.



Draw what you see happen.

SCIENCE: OOBLECK
NON-NEWTONIAN FLUIDS

Consistency

The perfect consistency for oobleck is when you can pick up a clump in your hand, form it into a ball of sorts, and then watch it flow like a liquid back into the pan or bowl!

SUPPLIES:

1-1.5 Cups of cornstarch
1 Cup water
Food coloring
Tray, bowl, measuring cups, and a spoon

PROCESS:

STEP 1: In your bowl or baking dish, add the cornstarch. You can start mixing the oobleck in a bowl and then transfer it to a baking dish if you prefer.

STEP 2: To make colored oobleck, add food coloring to your water first. You will need a good amount of food coloring if you want a vibrant color.

STEP 3: Start mixing the oobleck with a spoon, but I guarantee you are going to need to get your hands in the bowl during the mixing process. The mixture should not be crumbly or soupy!

THE SCIENCE OF OOBLECK

Oobleck is a fun substance made from a mixture of cornstarch and water. It's a bit messy too!

A mixture is a material made up of two or more substances to form a new material which is our oobleck! Kids can also explore liquids and solids which are states of matter.

Here you are combining a liquid and a solid, but the mixture doesn't become one or the other. Hmmm...

What do the kids think?

A solid has its own shape whereas a liquid will take the shape of the container it is put into. Oobleck is a bit of both!

That's why oobleck is called a non-Newtonian fluid.

Touch the surface of the oobleck in the bowl lightly. It will feel firm and solid. If you push harder, your fingers will sink into it like a liquid.

Oobleck is a simple and inexpensive science activity that is fascinating.

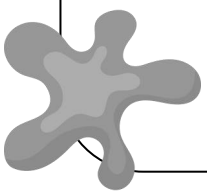
Is oobleck a liquid or a solid?

A non-Newtonian fluid is neither a liquid nor a solid but a bit of both! You can pick up a clump of the substance like a solid and then watch it ooze back into the bowl like a liquid.

Did you know that cornstarch is a polymer? Polymers have long chains that make them up (like the glue used in slime). When these chains get all tangled up with one another, they create more of a solid!

Oobleck

Materials I Used:



What I think will happen:

What I did:

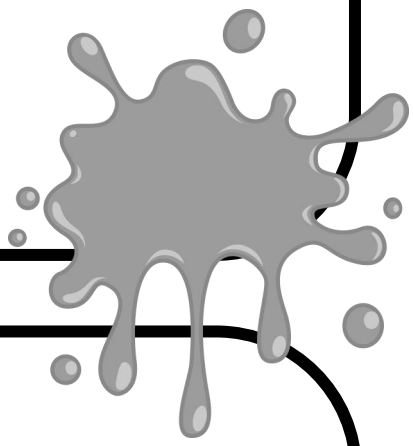
What I Saw:

What Happened:

Draw it:

OOBLECK

Draw what you think will happen.



Draw what you see happen.

SCIENCE: WALKING WATER

SUPPLIES:

6 Clear plastic cups or jars
Paper towels
Water
Food coloring

PROCESS:

STEP 1: You need two sets of primary colors. Add red, yellow, and blue food coloring (one color per cup) in a pattern. Give each cup a little stir to evenly distribute the color. Put the same amount of food coloring in each cup.

STEP 2: Cut strips of paper towel to fit in the cups and place the strips into the test tubes. There needs to be two ends in each cup.

Wait and watch what happens. At this point, you can set up a stopwatch to time how long it takes for the colors to meet and mix.

SCIENCE: WALKING WATER

QUICK SCIENCE:

Walking water science is all about capillary action which is also seen in plants. The colored water travels up the fibers of the paper towel. These gaps are similar to the capillary tubes of a plant that pull the water up through the stems.

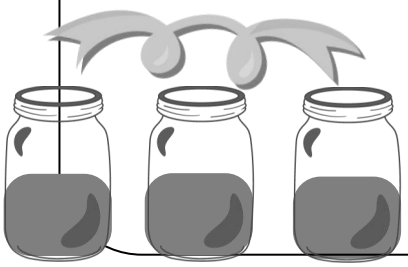
The fibers of the paper towel help the water move upward which is my this walking water science experiment looks like it is defying gravity. How else does water move up the tree?

As the paper towels absorb the colored water, the water travels up the towel strip. It meets up with the other colored water that has traveled up the neighboring strip.

Where the primary colors interact, they turn into the secondary colors. Both colors will travel as long as the towel fibers absorb the water.

Walking Water

Materials I Used:



What I think will happen:

What I did:

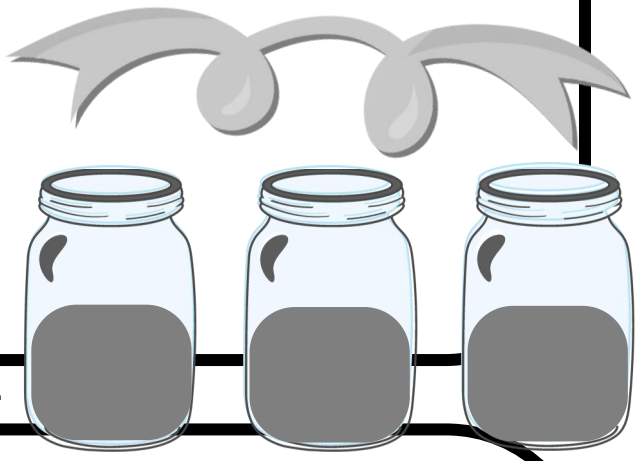
What I Saw:

Draw it:

What Happened:

Walking Water

Draw what you think will happen.



Draw what you see happen.

SCIENCE: HOW MANY DROPS?

SUPPLIES:

Pennies
Eyedropper or pipette
Water
Small bowl

PROCESS:

STEP 1: Fill a small bowl with water.

STEP 2: Use an eye dropper or pipette to pick up and carefully drip one drop of water at a time onto the penny.

STEP 3: Count how many drops you can fit onto one penny until the water overflows.

SCIENCE: HOW MANY DROPS?

QUICK SCIENCE:

This experiment is all about cohesion and surface tension.

Cohesion is the "stickiness" of like molecules to one another. Water molecules love to stick together!

Surface tension is the result of all the water molecules sticking together.

Once the water has reached the edge of the penny, a dome shape begins to form. This shape is due to the surface tension forming a shape that has the least amount of surface area possible (like bubbles)!

You can also test different coins, objects, or liquids to extend the activity and set up an experiment. Remember to change only one thing at a time.

How Many Drops? Penny Experiment

Materials I Used:

What I think will happen:

What I did:

What I Saw:

What Happened:

Draw it:

Name: _____

How Many Drops? Penny Experiment

Try your experiment multiple times.	How many drops?
Trial #1	
Trial #2	
Trial #3	
Trial #4	
Trial #5	
Trial #6	

How Many Drops? Penny Experiment

Draw what you think will happen.

Draw what you see happen.

SCIENCE: HOMEMADE LAVA LAMP

SUPPLIES:

Cooking oil (baby oil is clear and looks pretty, but it's not as cost effective as a large container of cooking oil)
Water
Food coloring
Glass jars or plastic cups
Fizzing tablets (generic is fine)

PROCESS:

STEP 1: Fill your jar(s) about 2/3 of the way with oil. You can experiment with more and less and see which one gives the best results.

STEP 2: Next, fill your jar(s) the rest of the way with water. These steps are great for helping your kids hone fine motor skills and learn about approximate measurements. We eyeballed our liquids, but you can measure out your liquids.

STEP 3: Add drops of food coloring to your oil and water and watch what happens. However, you don't want to mix the colors into the liquids.

STEP 4: Time to drop in a half to a whole fizzing tablet and watch what happens!

SCIENCE: HOMEMADE LAVA LAMP

QUICK SCIENCE:

Quite a few learning opportunities are going on here with both physics and chemistry! Liquid is one of the three states of matter. It flows, it pours, and it takes the shape of the container you put it in.

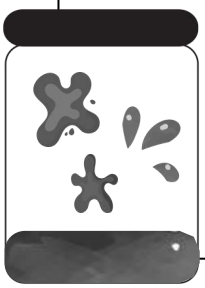
However, liquids have different viscosity or thicknesses. Does the oil pour differently than the water? What do you notice about the food coloring drops you added to the oil/water?

Why don't all liquids mix together? Did you notice the oil and water separated? That's because water is heavier than oil. Liquids are made up of different numbers of atoms and molecules. In some liquids, these atoms and molecules are packed together more tightly resulting in a denser or heavier liquid.

Now for the chemical reaction! When the two substances combine (tablet and water), they create a gas called carbon dioxide which is all the bubbling you see. These bubbles carry the color water to the top of the oil where they pop, and the water falls back down.

Lava Lamp

Materials I Used:



What I think will happen:

What I did:

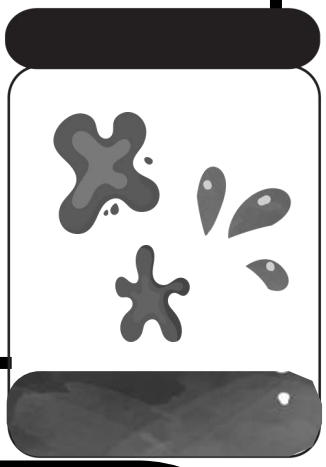
What I Saw:

Draw it:

What Happened:

Lava Lamp

Draw what you think will happen.



Draw what you see happen.

SCIENCE: ERUPTING LEMON

SUPPLIES:

Lemons (grab a few) and limes too!
Baking soda
Food coloring
Dish soap
Plate, tray, or bowl
Craft sticks or spoon

PROCESS:

STEP 1: First, place half of a lemon into a bowl or plate that to catch the mess when it erupts. You can juice the other half of the lemon to add to the erupting lemon volcano, or you can set up two at a time!

STEP 2: Next, take a craft stick and poke holes in the various sections of the lemon. Poking holes will help the reaction along a bit in the beginning.

STEP 3: Squeeze drops of food coloring around the different sections on the top of the lemon. Alternating with different colors of food coloring gives a fun effect.

SCIENCE: ERUPTING LEMON

PROCESS CONTINUED:

STEP 4: Next, squeeze some drops of dish soap all over the top of the lemon. What does dish soap do? Adding dish soap to a reaction like this also produces a bit of foam and bubbles! It's not necessary but a fun element to add if you can.

STEP 5: Now you can sprinkle a generous amount of baking soda onto the top of the lemon, and use a craft stick to press some of the baking soda down into the different sections of the lemon. Slowly, your lemon begins to erupt into a variety of colors. Additionally, you can use the craft stick to mash the lemon and baking soda around a bit more!

QUICK SCIENCE:

The chemical reaction of course. The critic acid from the lemon juice is reacting to the base of the baking soda creating a gas called carbon dioxide. Bubbling, fizzing carbon dioxide creates a rainbow of colors. This fizz helps the dish soap create a more exaggerated eruption.

The erupting lemon is also a great example of states of mater! All three states of matter are here including solids, liquids, and gasses. Can the kids identify each one? Does this activity work as well with limes, oranges, or grapefruits?

Erupting Lemon

Materials I Used:

What I think will happen:

What I did:

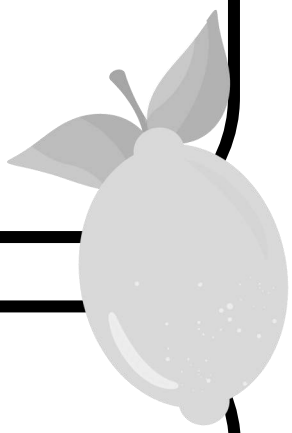
What I Saw:

Draw it:

What Happened:

Erupting Lemon

Draw what you think will happen.



Draw what you see happen.

SCIENCE: CATAPULTS & PHYSICS

SUPPLIES:

Jumbo craft sticks
Rubber bands
Plastic bottle lid
Adhesive
Fun items to launch (marshmallows, pompoms, erasers)

PROCESS:

Use a pair of scissors to make two v notches on either side of two jumbo craft sticks towards the ends of the sticks. See photo for placement. This step can be optional but helps to keep the rubber band in place.

Take the remaining 8 craft sticks and stack them on top of the other. Wind a rubber band tightly around each end of the stack.

Push one of the notched sticks through the stack under the top stick of the stack. Flip the stack over so that the stick you just pushed in is on the bottom of the stack.

SCIENCE: CATAPULTS & PHYSICS

PROCESS CONTINUED:

Lay the second notched stick on top of the stack and secure the two popsicle sticks together with a rubber band as shown below. The V notches that you cut help to keep the rubber band in place.

Glue or tape the bottle id in place. Place an item in the lid and launch it.

QUICK SCIENCE:

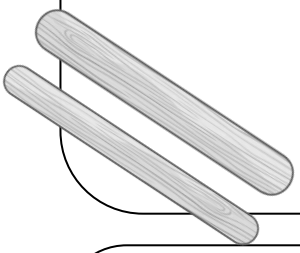
Newton's Laws of Motion! An object at rest stays at rest until a force is applied. An object stays in motion until something creates an imbalance in the motion. Every action causes an equal and opposite reaction.

When you pull down the lever arm of the catapult, all the potential energy gets stored up! Release it and that potential energy changes over to kinetic energy. Try pushing the stack closer to the tip or moving it back. What changes?

What happens when you launch differently weighted objects?

Popsicle Stick Catapult

Materials I Used:



What I think will happen:

What I did:

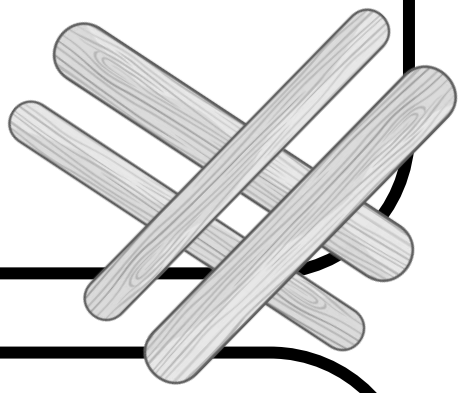
What I Saw:

What Happened:

Draw it:

Build a Catapult

Draw what you think will happen.



Draw what you see happen.

Popsicle Stick Catapult

Name: _____

My Catapult Design (Build a bridge then draw it here)	Changes I want to Make
First Catapult How far did your object go? _____	
Second Catapult How far did your object go? _____	
Third Catapult How far did your object go? _____	

SCIENCE: CANDY COLORS

SUPPLIES:

Rainbow candy pieces (several brands work well)
Water
White Plates or Baking Dishes (flat bottom is best)

PROCESS:

Arrange the candy in a rainbow pattern around the edge of the plate alternating colors in any number you like such as singles, doubles, and triples.

Pop in a fun cookie cutter to the center of the plate to add a little more fun to the theme and some additional color. You can even place a green Skittle or two in the center of the cookie cutter. No cookie cutter is fine too!

Carefully pour water into the center of cookie cutter/plate until it just covers the candy. Be careful not to shake or move the plate once you add the water or it disturbs the effect.

SCIENCE: CANDY COLORS

QUICK SCIENCE:

Watch as the colors stretch and bleed out away from the candy, coloring the water. What happened? Did they mix? What if you used clear soda instead would that change the outcome?

First, you notice the color coating dissolve in the water because the water molecules and coating are highly attracted to one another!

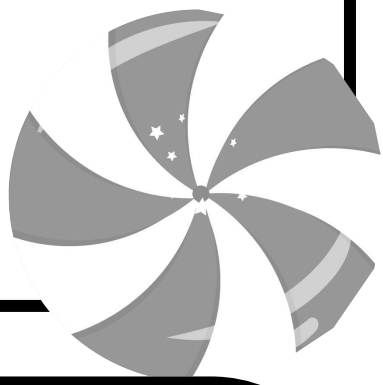
This colorful candy science demonstrates a process called stratification. The simple definition is that stratification is the arrangement of something into groups.

This activity is all about water stratification. The candy water has different masses with different properties due to the different colors. The different masses create the barriers you see within the different colors of candies.

Try again with different candy and compare the results!

Candy Colors

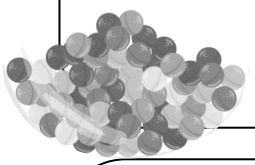
Draw what you think will happen.



Draw what you see happen.

Skittles

Materials I Used:



What I think will happen:

What I did:

What I Saw:

What Happened:

Draw it:

SCIENCE: INFLATING BALLOONS

SUPPLIES:

Baking soda
Vinegar
Empty water bottles
Balloons
Measuring spoons and funnel (optional but helpful)

PROCESS:

For each bottle you want to set up the following measurements:

STEP 1: Add about 3 tablespoons of baking soda to a balloon. A funnel helps but also a friend can help stretch open the balloon. Here's where you can experiment as well by trying different amounts of baking soda and recording the results. You can easily set up multiple bottles and let the balloons all blow up at the same time.

STEP 2: Fill your bottle about 1/3rd of the way full with vinegar.

STEP 3: Carefully attach the balloon to the bottle opening without letting any of the baking soda fall into the bottle. Lift the balloon and let the baking soda fall into the bottle.

SCIENCE: INFLATING BALLOONS

QUICK SCIENCE:

Measure each balloon and record the results if you are blowing up multiple balloons and testing multiple measurements. Remember in a good science experiment project, you change only one variable at a time.

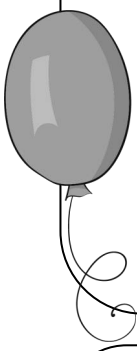
Ideas include:
- change up the amount of baking soda or vinegar
- switch out the vinegar for lemon juice
- compare with baking powder and water (also a chemical reaction that produces carbon dioxide)

The chemical reaction between the base (baking soda) and the acid (vinegar) inflates the balloon. The "lift" is the gas produced from the two ingredients. This gas is called carbon dioxide or CO2.

As the gas tries to leave the plastic container, it goes up into the balloon because of the tight seal you have created. The gas has nowhere to go and is pushing against the balloon, so it inflates it! What gas do you produce when you blow up a balloon. Compare the two!

Inflating Balloon

Materials I Used:



What I think will happen:

What I did:

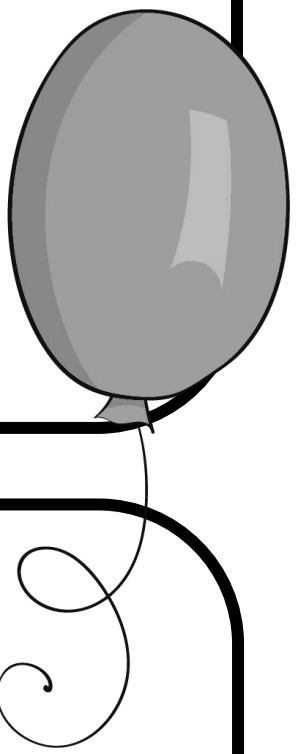
What I Saw:

Draw it:

What Happened:

Inflating Balloon

Draw what you think will happen.



Draw what you see happen.

SCIENCE: SUGAR WATER DENSITY

SUPPLIES:

Note: This activity requires very hot or boiling water for best results

Water

Red, yellow, green and blue food coloring

Clear glass jar

Eyedropper

Sugar

4 cups or glasses

PROCESS:

It may look like there are too many steps to try this experiment! However, steps 1-8 are mostly the same except for changing the color and amount of sugar. This experiment is best suited for older kids. You can experiment with just two colors as well to make it easier.

STEP 1: Add 1/2 cup of water to a pot and use a toothpick to add a touch of blue food coloring (too much color and it won't work).

STEP 2: Mix in 8 tablespoons of sugar, boil for 15 seconds or until the sugar has dissolved and then pour into a glass.

STEP 3: Rinse your pot and add 1/2 cup of water to the pot and use a toothpick to add a touch of green food coloring (too much color and it won't work).

SCIENCE: SUGAR WATER DENSITY

PROCESS CONTINUED:

STEP 4: Mix in 6 tablespoons of sugar, boil for 15 seconds or until the sugar has dissolved and pour into a glass.

STEP 5: Rinse your pot and add 1/2 cup of water to the pot and use a toothpick to add a touch of yellow food coloring (too much color and it won't work).

STEP 6: Mix in 4 tablespoons of sugar, boil for 15 seconds or until the sugar has dissolved and pour into a glass.

STEP 7: Rinse your pot and add 1/2 cup of water to the pot and use a toothpick to add a touch of red food coloring (too much color and it won't work).

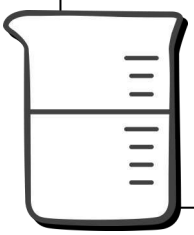
STEP 8: Mix in 2 tablespoons of sugar, boil for 15 seconds or until the sugar has dissolved and pour into a glass.

STEP 9: Let the colored water set at room temperature for about an hour.

STEP 10: Pour the blue sugar water into your clear jar about 1/4 way full.

Sugar Water Density

Materials I Used:



What I think will happen:

What I did:

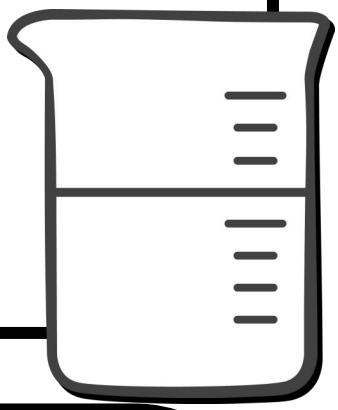
What I Saw:

What Happened:

Draw it:

Sugar Water Density

Draw what you think will happen.



Draw what you see happen.

SCIENCE: SUGAR WATER DENSITY

PROCESS CONTINUED:

STEP 11: Use the dropper to add the green sugar water next but do this with the dropper, dropping the sugar water along the inside of the glass slowly.

STEP 12: Use the dropper to add the yellow sugar water next but do this with the dropper, dropping the sugar water along the inside of the glass slowly.

STEP 13: Lastly use the dropper to add the red sugar water but do this with the dropper, dropping the sugar water along the inside of the glass slowly.

QUICK SCIENCE: What is water density?

Density is all about the compactness of stuff in space. For this experiment, the more sugar in each glass of water, the greater the density of the water. Same space, more stuff in it!

The denser the substance, the more likely it sinks.

By increasing the amount of sugar in the solution but keeping the amount of water constant, you create solutions that have increasing densities. The more sugar you mix into the same amount of water, the higher the density of the mixture. You can see this with the layers of sugar water in the jar!

You can vary this water density experiment by looking at the density of different concentrations of salt dissolved in water as well.

SCIENCE: LIQUID DENSITY TOWER

SUPPLIES:

Honey
Light corn syrup - color it red
Dawn dish soap
Water - color it green
Vegetable oil
Rubbing alcohol - color it yellow
Clear lamp oil
Food coloring
Clear glass jar

PROCESS:
The more layers you add, the more steps you add!

STEP 1: Pour 1/2 cup of honey into the bottom of your jar.

STEP 2: Mix 1/2 cup of corn syrup with food coloring. Pour the corn syrup onto the center of the honey.

SCIENCE: LIQUID DENSITY TOWER

PROCESS CONTINUED:

STEP 3: Squeeze 1/2 cup dish soap slowly onto the corn syrup.

STEP 4: Mix 1/2 cup water with food coloring, I chose green. Use a baster or pipette to slowly drop the water down the inside side of the jar onto the soap or else bubbles form.

Note: You want to use a new eyedropper for each liquid or rinse thoroughly in between steps.

STEP 5: Add 1/2 cup of vegetable oil onto the water. Make sure to drip it along the inside side of the jar.

STEP 6: Mix 1/2 rubbing alcohol with food coloring, I choose yellow. Drip the liquid down the inside side of the jar.

STEP 7: Drip 1/2 cup of clear vegetable oil down the inside side of the jar.

QUICK SCIENCE:

What is density?

We know this liquid density tower deals with matter, liquid matter (matter also includes solids and gasses).

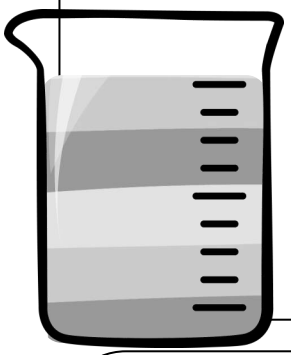
Matter has different densities meaning some are heavier and some are lighter. It's hard to imagine that different liquids have different weights, but they do!

Like solids, liquids are made up of different numbers of atoms and molecules. In some liquids, these atoms and molecules are packed together more tightly resulting in a denser or heavier liquid like the honey!

These different liquids always separate because they are not the same density and this separation forms the layers of color in the jar!

Liquid Density Tower

Materials I Used:



What I think will happen:

What I did:

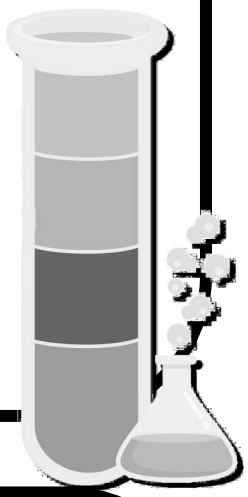
What I Saw:

Draw it:

What Happened:

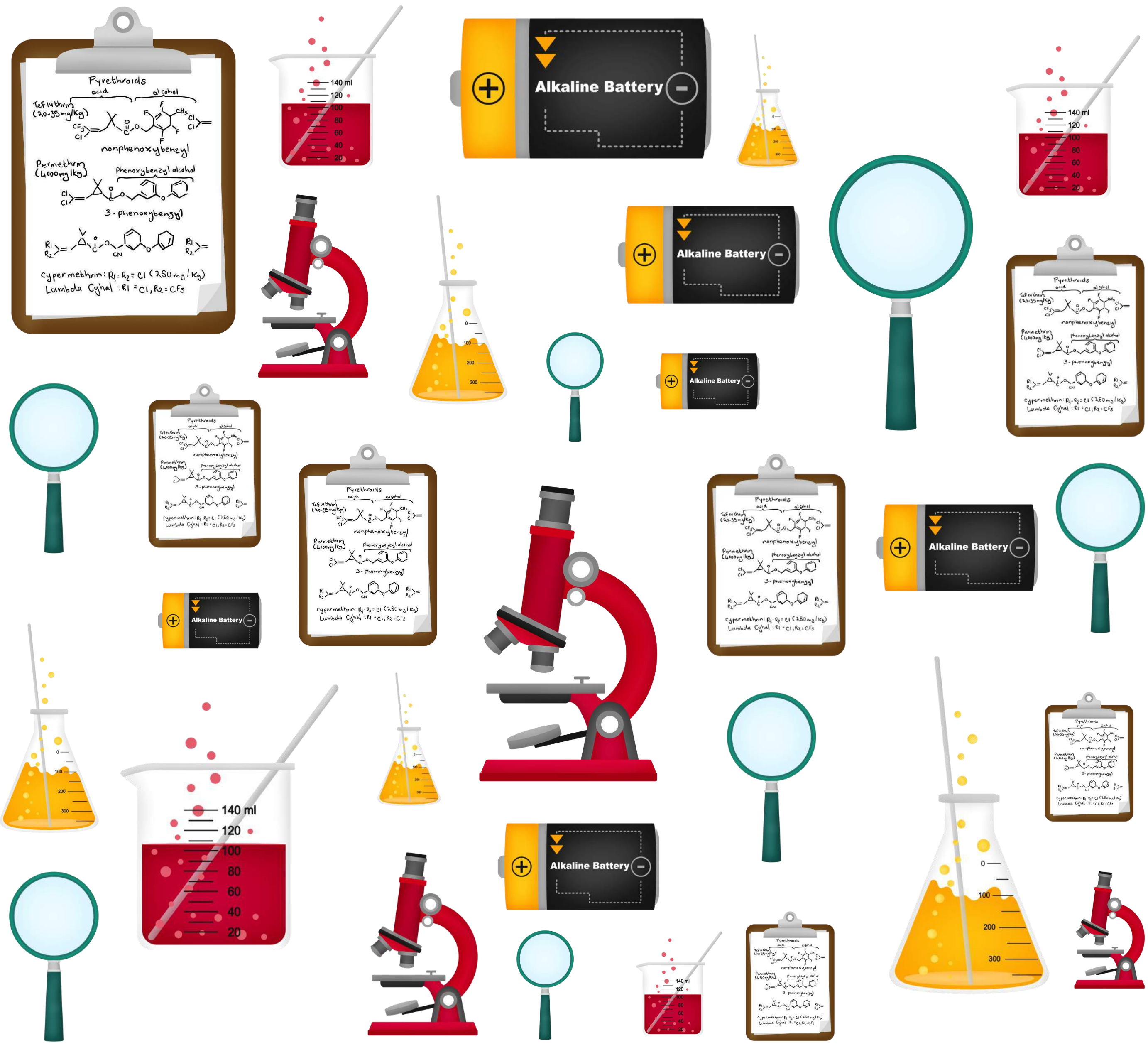
Liquid Density Tower

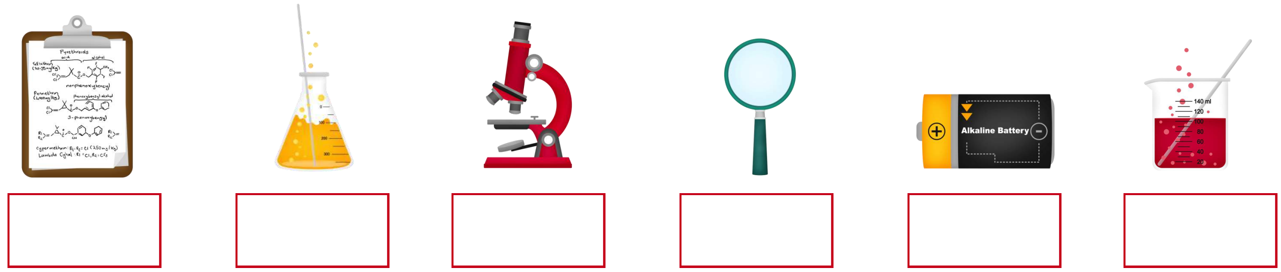
Draw what you think will happen.



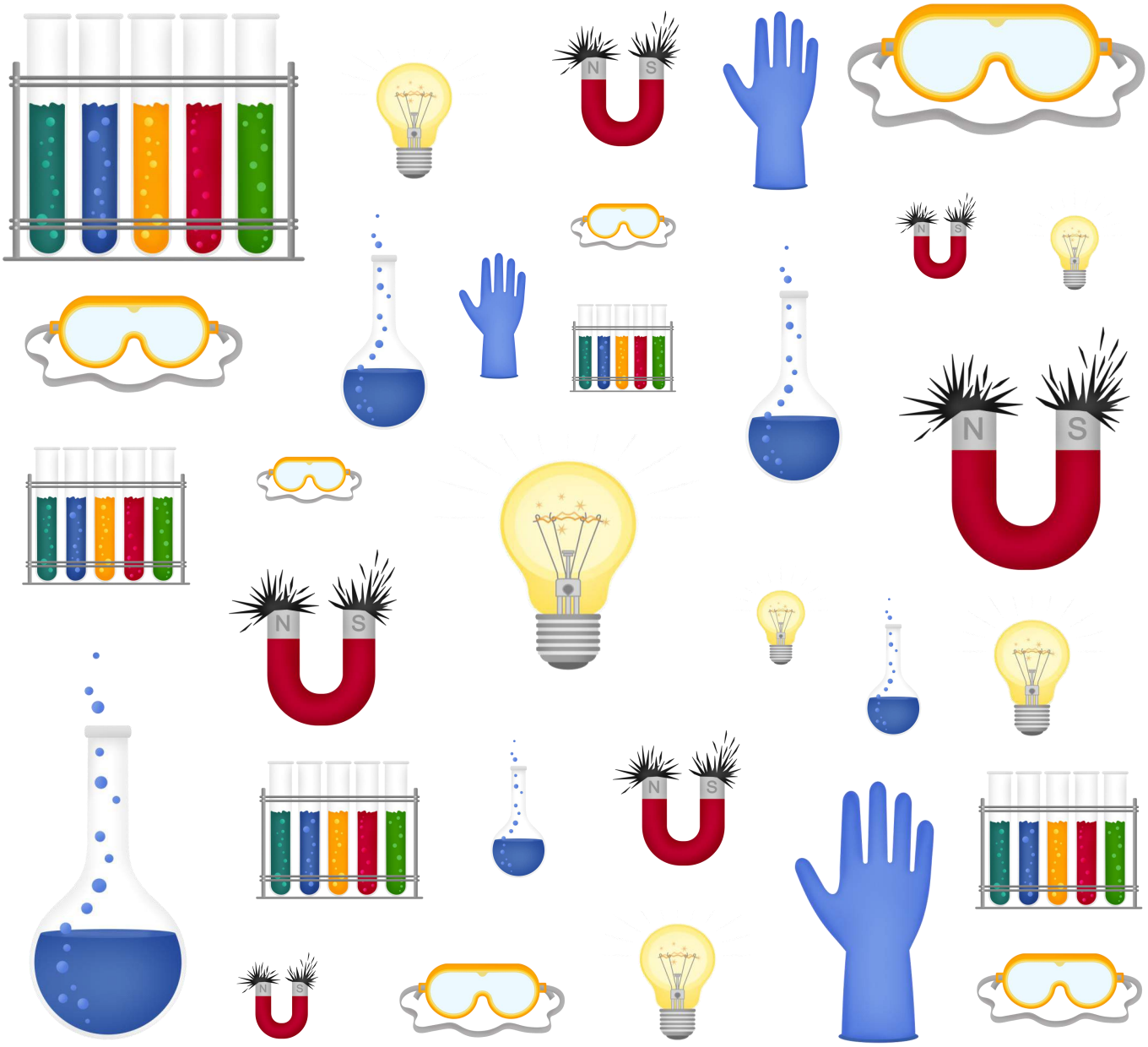
Draw what you see happen.

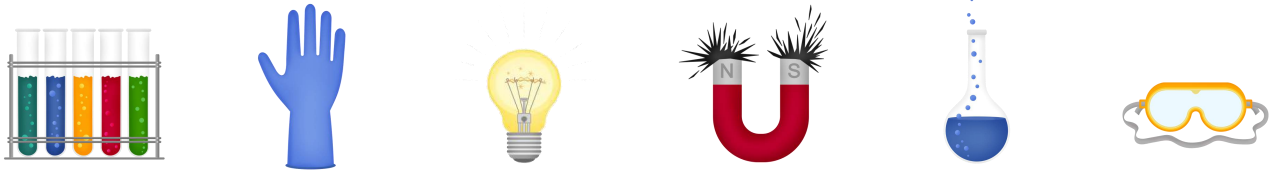
Science I Spy



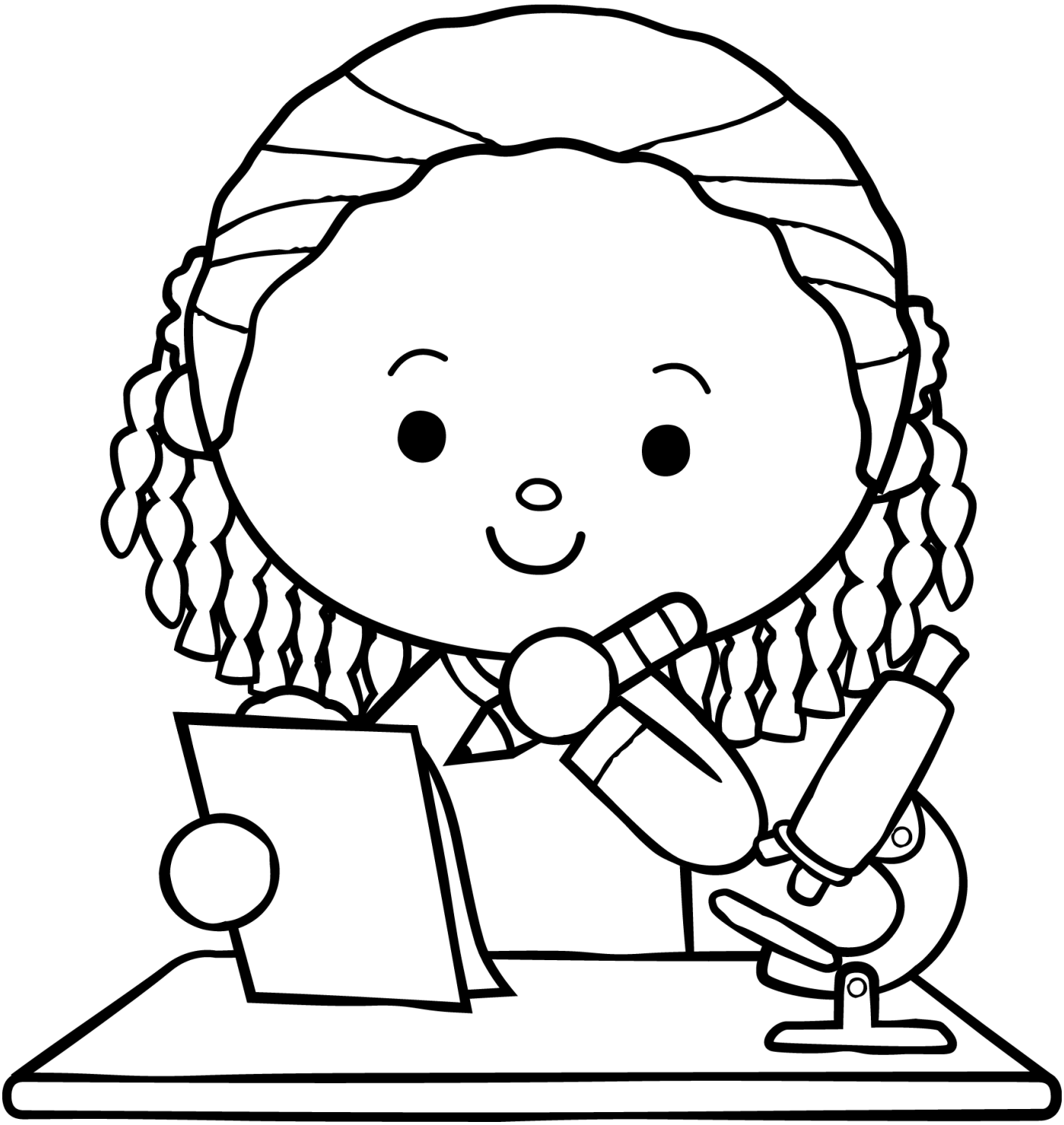


Science I Spy





_____‘s Science Journal



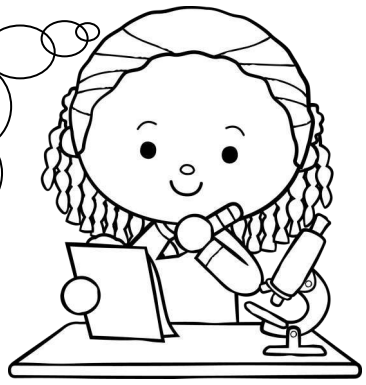
Graphics by: Little Reds Clipart

_____'s Science Journal

Graphics by: Little Reds Clipart

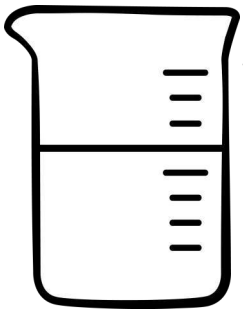
A Scientist is a person who...

Wonders



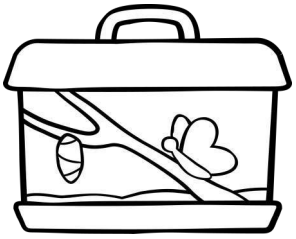
designs

MEASURES

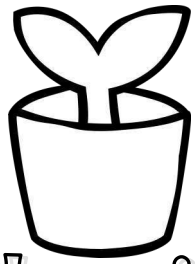


ASKS QUESTIONS

DISCOVERS

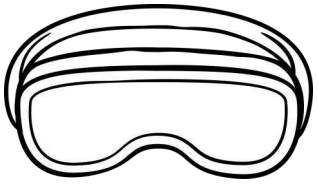


Observes



Classifies

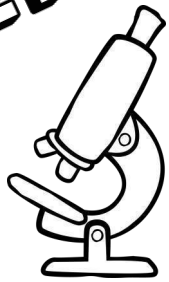
Invents

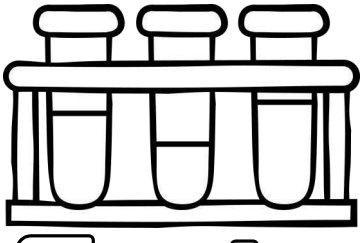


Collects

EXPERIMENTS

ENGINEERS





Sorts

Records

101 Stem Supplies

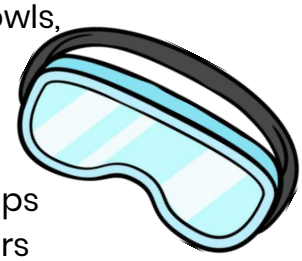
BASIC PANTRY STAPLES

Baking soda
Cooking oil
Corn starch
Corn syrup
Eggs
Food coloring
Fizzing tablets
Food coloring
Gumdrops
Lemons
Maple Syrup
or molasses
Marshmallows
Peeps
Plastic wrap
Rubbing alcohol
Salt
Skittles
Sugar, sugar cubes
Water
White vinegar
Whole milk

BASIC SUPPLIES

Acrylic paint
Adhesives (hot glue,
glue dots, duct tape, tape)
Aluminum foil
Baggies
Balloons
Cardboard
Clothes pins
Coffee filters
Coins
Cotton balls
Cotton swabs

Craft paper
Craft sticks
Craft tray, baking dish, or cookie
sheet (for containing messes)
Dryer hose
Empty water bottles
Faux grass, plants
Feathers
Felt
Flat marbles
Food coloring
Funnel
Gears
Glitter glue
Glow stars
Golf tees
Hammer
Hinges
Jumbo craft sticks
Leaves
LEGO® bricks
Lollipop sticks
Magnets
Marbles
Nails
Needle and thread
Paper clips
Paper towels
Paper plates, bowls,
cups, spoons
Pencils
Pipe cleaners
Plastic bottle caps
Plastic containers
Plastic pipes
Pom-poms
Rubber Bands



Seeds
Scissors
Shells
Skewers
Soil
Sponges
Springs
Stapler
Straws
String, raffia, ribbon
Styrofoam balls
Tape measure
Tea lights
Tin cans
Toilet paper rolls
Toothpicks
Twine
Twist ties
Washi Tape
Water
Whirly gig
White shallow bowl
or dish and cups
Wire
Wooden planks
Yarn
Zip ties

BASIC SCIENCE TOOLS

Pipettes
Meat Basters
Squeeze bottles
Measuring cups
Measuring spoons
Magnifying glasses
Safety glasses
Smocks or old clothes

Scientific Process

Ask a Question

What do you want to learn or test?

Do Some Research

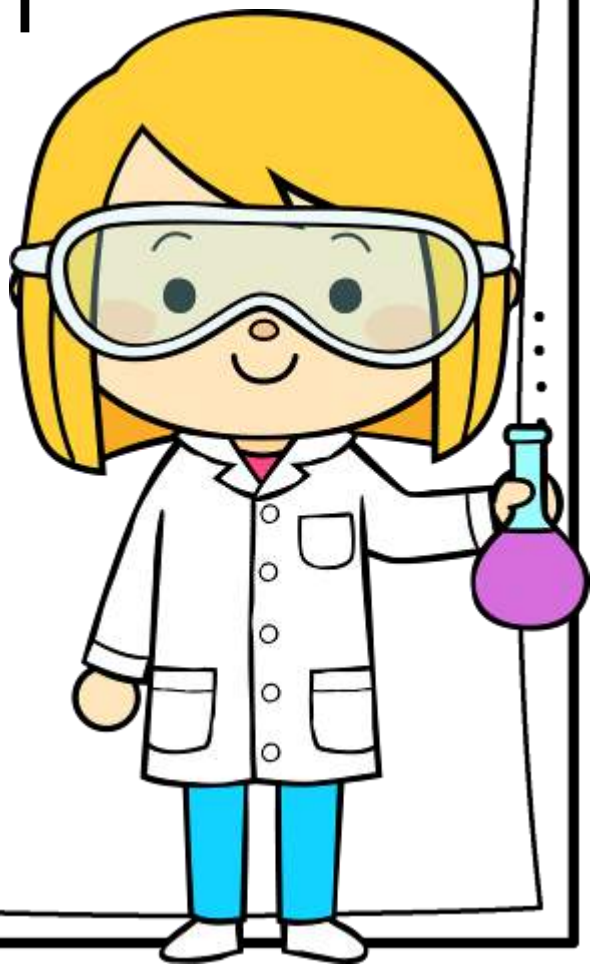
Gather information about what you want to learn.

Make a Hypothesis

Try to predict the answer!
A hypotheses sounds like an
If I do this, then this will happen.
This being your experiment
and outcome.

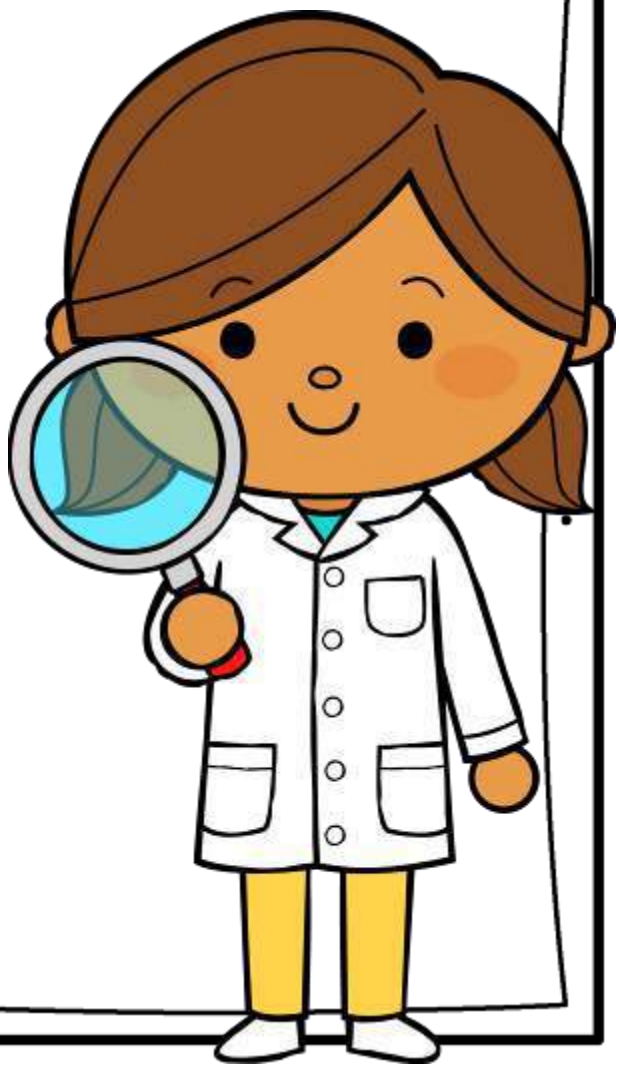
Set Up An Experiment

Design a test or experiment to see if your hypothesis is correct!



Record Data

Record what happens during the test or experiment.



Conclusions

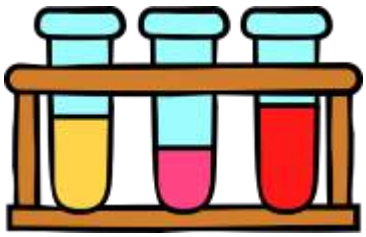
Analyze or review your data to see if your hypothesis was correct!

SCIENTIFIC METHOD

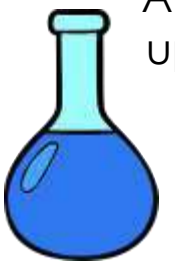
A method or procedure that uses an organized approach to solving a problem or answering a question through the use of a hypothesis, experimentation, observation, and data analysis.

HYPOTHESIS

An educated guess or simple explanation made as a starting point for further investigation or experimentation.



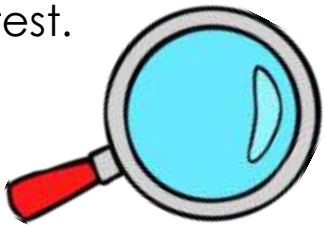
EXPERIMENT



A scientific procedure set up to test a hypothesis or make a discovery. It usually involves a dependent variable, independent variable, and a control. The outcome is not necessarily known.

INDEPENDENT VARIABLE

The independent variable is the part of your experiment that you want to test.



DEPENDENT VARIABLE

The dependent variable is the outcome that occurs in your experiment and a response to the changing independent variable.

CONTROL

The control is the neither the independent nor the dependent variable. The control is what you will compare the results in your experiment.

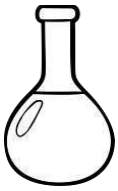
My Science Investigation

My Question

My Hypothesis

Research Notes

Supplies



Experiment

Observations

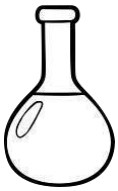
draw or write

Conclusions

My Science Investigation

My Question

Hypothesis

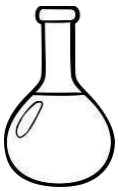


What is the Control?

Supplies Needed

What is the Dependent Variable?

Experiment



What is the Independent Variable?

Observations

Conclusions

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