IMAGINE™ YOUR STORY

Summer of M.E.

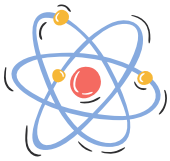
(MEANINGFUL ENTERTAINMENT)

Presents

Super Hero Science

Science Scavenger Hunt

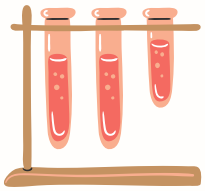
1 ☐ Hydrogen and oxygen come pouring out.
It drips and it dribbles and it comes from a spout.



2 ☐ We breathe it out and it takes it in.
Your next clue is where photosynthesis begins.

3 ☐ When I cut it a gas will irritate my eye.
Sometimes when I'm cooking you might see me cry.

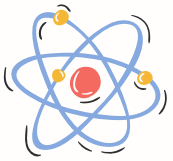
4 ☐ So long ago they used a sundial to tell it.
It starts with a "C" if you want me to spell it.



5 ☐ Early man discovered it and used it with wood.
When I use it on this thing it smells so very good.

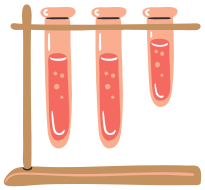
6 ☐ It's white and it's healthy but doesn't come from a cow.
If you know what it is, you should have one right now.

7 ☐ A blue whale is louder than any animal around.
Go in search of a thing that also makes a loud sound.



8 ☐ It works because your brain creates images from dots.
That's how you can watch shows that you like a whole lot.

9 ☐ When atoms and molecules start getting jumpy
This thing can make steak and potatoes that are lumpy.



10 ☐ Plastikos is the Greek word for this stuff made of crude.
We use it to make dishes and little boxes for our food.

11 ☐ Scientists call it sucrose but here's a hint you should take.
You eat it in candy, in juice and birthday cake.

12 ☐ It's liquid and important for life, no debate.
If we want it to be hard we put it here and just wait.

13 ☐ Inside each small kernel is a drop of water you can't see.
That's why it pops when it's hot and makes a snack for you and me.

14 ☐ A long time ago people couldn't just turn one on.
Then a man named Thomas Edison said, "Let me try with electrons!"

*Answers on next page

Super Hero Science Challenges

Grow kryptonite crystals: Add 1 part hot water & 1 part epsom salts to bowl. Stir until almost dissolved. Then refrigerate.

Make a tornado in a jar: Fill a cylindrical jar with water, a squirt of dishsoap & 1 teaspoon vinegar. Swirl.

Build a thunder sound machine with a balloon stretched over a can. Secure balloon with a rubber band.

Test various materials to assess which makes the strongest shield.

Explore magnetic fields with iron filings in a plastic bottle.

Design & build an invisible airplane with clear food containers & tape.

1.Water 2.Plant 3.Onion 4.Clock 5.Candle 6.Egg 7.Any Loud Item 8.TV 9.Stove 10.Plastic
11.Sugar 12.Freezer 13.Popcorn 14.Lamp

Sticky Spiderman

The cool thing about Spiderman is his ability to stick to walls. That's called adhesion, the attraction of one kind of molecule to another. Adhesion allows water to climb upward against gravity.

Spiderman's Adhesion

What you will need:

- Two plastic cups
- Water
- Absorbent cotton twine, yarn or string (thicker than thread)
- Paper towels

*Do this experiment in a tub or sink

Directions:

Cut 2 feet length of string.
Fill one plastic cup halfway with water and set it next to an empty cup.
Soak one end of the string in the cup for 10 seconds.
Hold the other end of the string above the empty cup
Hold the cup with the water upright; use your pointer finger to keep the string along the bottom of the rim as you tilt it towards the empty cup.
Pour the water slowly along the string.
Watch as it clings to the string and drips off the end into the empty cup.
The water adheres to the water-soaked string.

The Thundering Hulk

Hulk has the superpowers of the thunder clap. When he claps his hands, it is so hard that a sonic boom is created, a blast of air that knocks down everything around it. This rapid expansion and contraction of air creates an intense supersonic shock wave. When the shock wave slows down to the speed of sound, you hear the thunderclap.
This experiment is only a very slight comparison to the rapid expansion of air around a lightning bolt, but the principle is the same.

The Hulk’s Thunderclap

What you will need:

- Balloons

Directions

Blow up some balloons near its breaking point (this compresses the air inside).
Then tie the balloons and set them on the ground.
Slowly step down on each of the balloons until they pop.
You will feel a jolt as the air expands outward.
Make sure to pick up the pieces of your balloons.

Storm's Thunder Storm

Thunderstorms start when cold air from below meets warm air from above.
This movement is known as convection.

What you will need:

- A glass bowl
- Warm water
- An ice cube with blue food coloring
- Red food coloring

Directions:

Freeze an ice cube with blue food coloring.
Just before you start the experiment, fill a glass bowl with lukewarm water.
Start the experiment with the blue ice cube to the left side of the bowl, and three drops of red food coloring to the right side of the bowl.
Watch what happens.

The Flash
Create an Indoor Boomerang

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What you will need:

- Heavy paper such as card stock, thin cardboard or watercolor paper.
- Scissors
- Tape or glue (allow for drying time), or rubber bands
- 360 degree protractor. This is not essential, but VERY helpful.
- Pencil

Directions:

Decide on the shape of your boomerang's arm. The design is not nearly as important as having each arm exactly the same shape. Arms with slightly larger tips tend to work best.

Once you have one arm, you can use it to trace more arms. Cut out 3-4 in total.

Tape 3-4 arms together in a cross or Y shape. Use the 360 degree protractor to determine the distance between arms. The arms at 120 degree angles make the best result in getting the boomerang to return.

Troubleshooting:

Try different launching angles.
Try different launching speeds.
Make sure the angles are even.
Even if it doesn't come all the way back to you, it has a really cool spin.