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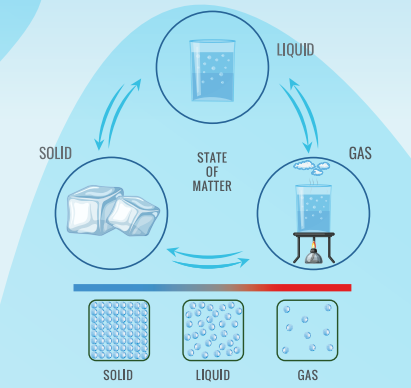
## DO YOU KNOW?

**What is the main difference between a gas and a liquid?**
*(Tick the box with the correct answer)*

- ☐ Gases are always colder than liquids.
- ☐ Gases can completely fill any container.
- ☐ Gases have a definite shape.
- ☐ Liquids are compressible, but gases are not.



## FUN FACT

One bucket of water contains more **atoms** than all the buckets of water in the Atlantic Ocean combined!

## TRY IT OUT!

Write secret messages with invisible ink

**Materials:**
Lemon juice, cotton swab, paper, a heat source (e.g., candle).

**Instruction:**
Write a message with lemon juice using the cotton swab.

Once dry, gently heat the paper to reveal the message.

**What's the science behind?**
Lemon juice weakens the paper **fibres**. When heated, these areas **oxidise** faster, turning brown and revealing the hidden message.

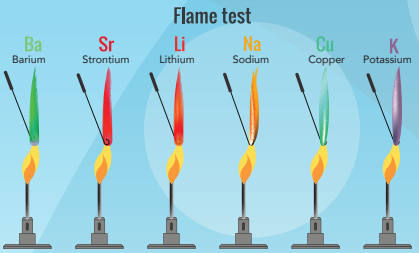
# OBSERVE

## Colourful Flames

Different **chemicals** produce different colours when burned.

This happens because the heat excites **electrons**, and when they return to their normal state, they release **energy** as **light.**

This principle is used in fireworks and **flame** tests.




THINK

Why do potatoes soften and eggs get hard when they are boiled in water?



BECAUSE

*Potatoes have lots of tiny* ***starch*** *pieces. When you boil them, these pieces soak up water and swell, making the potato soft and squishy.*

*Egg* ***proteins*** *are like a bunch of tangled strings. When boiled, these strings stick together tightly, turning the egg from runny to firm.*

*So, boiling makes potatoes soft and eggs hard because of how their insides react to heat!*

# CHEMISTRY EVERYWHERE

Fireflies glow by combining a chemical called **luciferin** with some other chemicals to make a reaction that produces light.

The reaction requires **oxygen,** so fireflies control whether or not they're glowing by controlling the presence of oxygen in their light-producing organ.

# HEROES OF WONDERVERSE

Welcome to Wonderverse!
A world where the rivers bubble and the mountains fizz. Magical minerals and gases power everything here!

I'm Leo and this is Zoe. We are the explorers of Wonderverse.

Hello Leo and Zoe!
I am _____ and I am from planet _____.

WRITE: Useful gases found on my planet are:

1. H __DR__G__ __
2. __ X __ __ EN
3. N __ TRO __ __ __

"It's nice to meet you", said Zoe. She then said, "We spotted a problem today in Wonderverse. The Fizz Mountain in the centre of our town has stopped bubbling! The Fizz Mountain runs on a special mineral called Sparklon, and is vital for the town. Without it, the town loses its sparkle!"

"Oh dear! What are you going to do now? I can check something here on Earth that can work for you", I said.

THINK: Do we have something like Sparklon on Earth?

“Thank you. Now, we shall set out on a quest to find the missing Sparklon, a mineral that releases gas when mixed with vinegar”, said Leo.

“Leo, look there! It looks like Sparklon", exclaimed Zoe in excitement. "Let’s mix it with vinegar and check”, suggested Leo. They added vinegar to it and watched as it bubbled vigorously and released gas. “Yes, it is Sparklon!” cheered Leo.


TALK ABOUT: How do we use vinegar in our houses?

"Zoe, let's see what our friend from Earth found out?" he said further.


"I found out that baking soda, when mixed with vinegar, makes bubbles", I explained. Leo and Zoe jumped with excitement and said, "Now you can make your own Fizz Mountain too!" "That is a wonderful idea! I will make it with my science teacher in the lab", I exclaimed.

FIND OUT: What happens if you soak an egg in vinegar?

“Now, let’s get back to the town centre to fix the Fizz Mountain”, said Zoe. Leo looked at me and asked, “Would you like to join us?” I was excited to know what was going to happen next. Zoe and Leo rushed back with the Sparklon for the Fizz Mountain.

As soon as Leo and Zoe mixed the Sparklon into the mountain’s reservoir, _____
_____
_____
_____
_____
Thus, they became the heroes of Wonderverse.

Draw a picture of how you imagine Wonderverse looks like:

This story is written by:

and illustrated by: