GOALS

1. This mt I would like to get more work done and do more stuff

2. I would like to pay more attention in class and talk less

Glossary

Paraffin wax - this is a by-product created when refining petrol used commonly in the place of beeswax in candles as their role like in all our experiments

Vapour - this means the product of something that evaporates and makes a gas like what happened when we melted the ice. ∪

Wick - the wick is a very important part of the candle it uses capellar action to pull melted wax (the fuel) to the candles flame where it gets used as fuel for the flame.

Carbon - carbon is a by-product of burning a material it is black powder.

Oxeggen - Oxeggen is the air we breath and is almost every where. Oxeggen is used in combustion and flame cant survive without it.

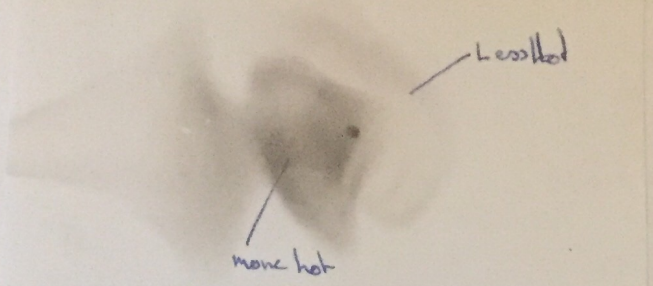
Test Tube - A glass tube used for holding substances such as Bromothymol

Tongs - Used to hold either hot or dangerous test tubes.

Reflection

I Loved this main It was really great. I achieved all my goals and I really engaged the assignments and learning about all the chemists and doing the experiments. It was really great and exiting and I liked doing my project. I also keept up to date with my work. I found the amount of writeing challanging but fun.

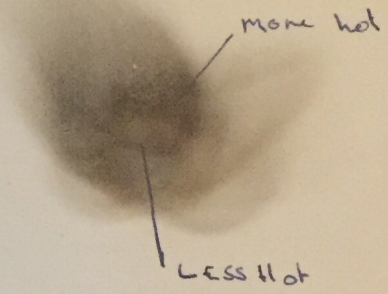
A



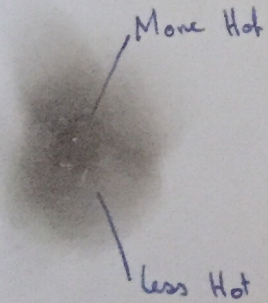
This A sheet of paper is very lightly burnt with a light dusting of ash that is very spread out. It is more grey than black and has a weird shape.

B paper is very spread out with a concentration of very black charred paper but on the edges it is quite light but on the middle it is blacker and dark brown.

B



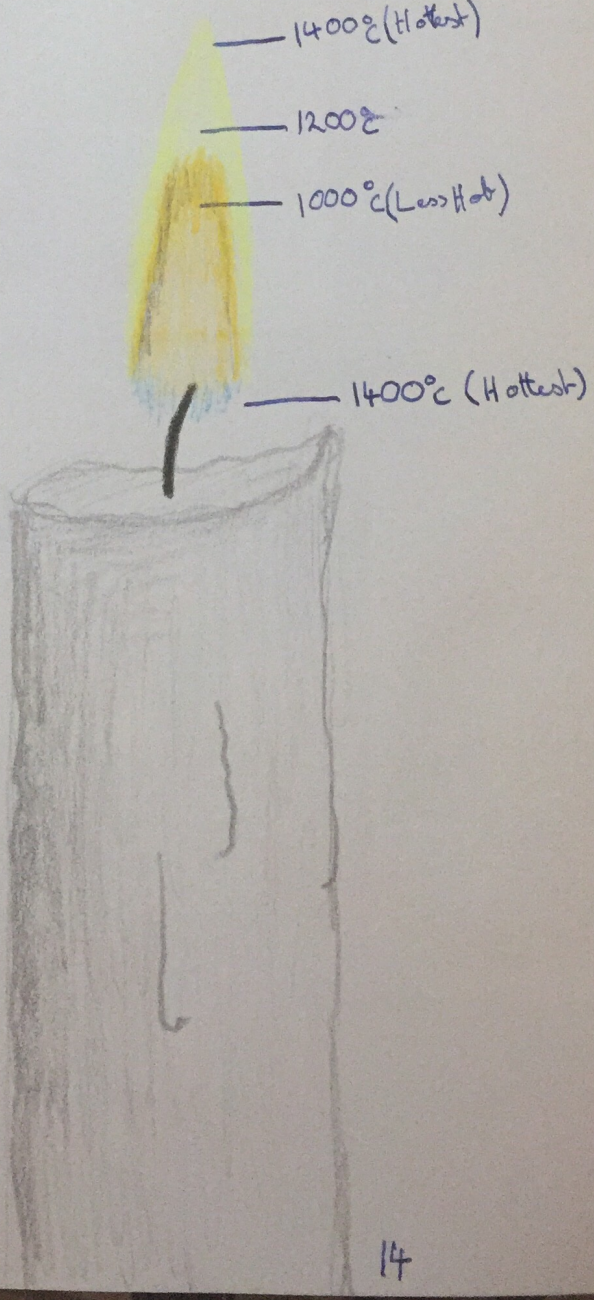
C



C is a very small patch of blackened paper and is only slightly lighter than paper B.

Conclusion

The pattern s made from the candle flame varied significantly from point I, II and III. The more intense the heat energy the more intense the black marking on the paper. The heart of the candle is hot (1000°c) but the outside zone is the hottest (1400°c). oxygen is available to drive combustion on the outside of the flame while inside the flame the oxygen is less concentrated.



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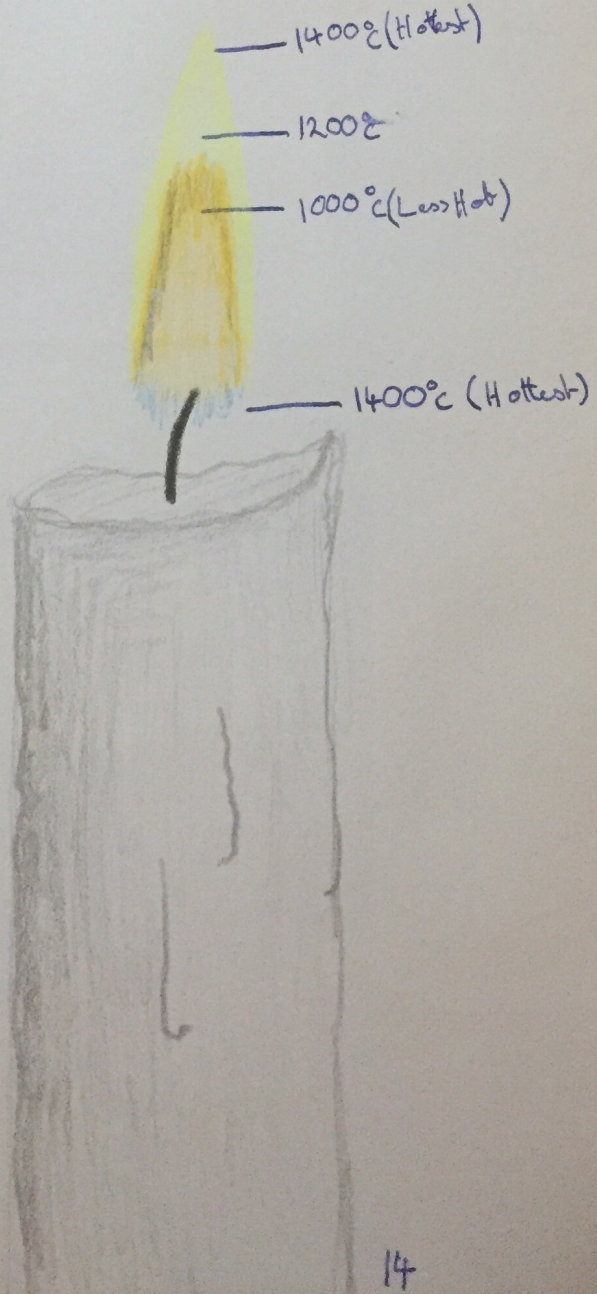
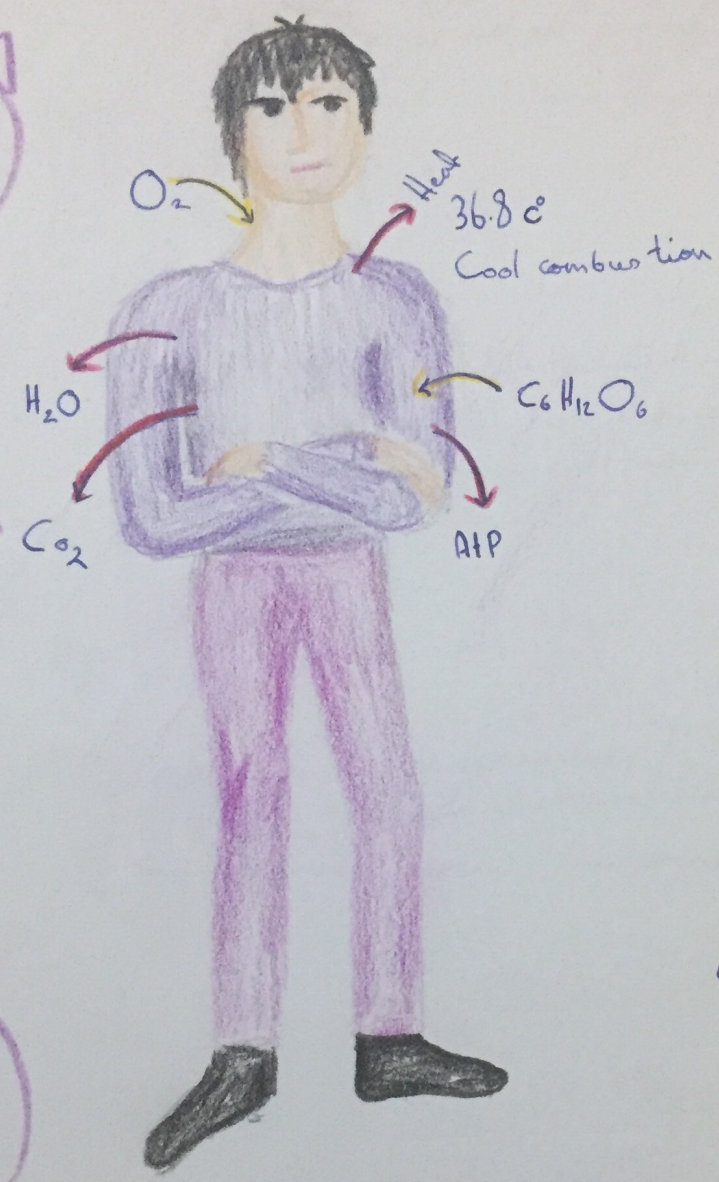
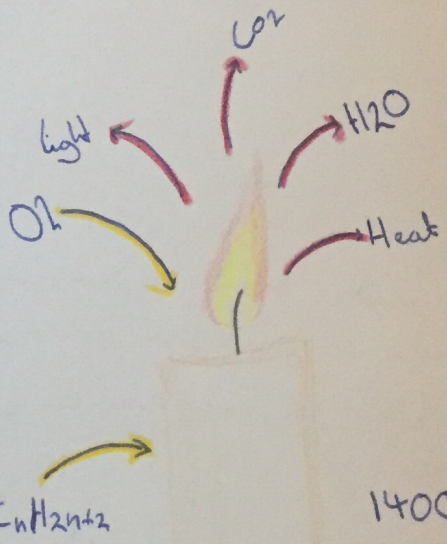


The Candle Poem

Wax is going everywhere
On the table in my hair
It was a solid now its not
Its a liquid because its hot
But the heat of the flame
Changed it again to a diggerent name
It was a liquid now its vaporer
Combustion does morethan just burn paper
Now there is some condensation
Water gram wax is a sensation
The things that make this heat and light
Is oxygen that you can not see with yoursight.

Human Respiration and Candle





1400°c II
≈1000 I-III
Hot combustion

Questions

What forms of energy are released from a candles combustion?

The forms of energy released from a candles combustion are light and heat.

Describe the 'heat' energy journey from candle to water?

The heat from the candle rise, and heat the ice's molecules and makes it move faster and the molecules start to rub over one another and turns into liquid after this speed up enough.

Conclusion

When candle burns or combusts it produces energy. Heat energy is released from the flame and travels up above the candle. Light energy comes from the flame and travels through the air to our eye.

Combustion

Human And Candle History

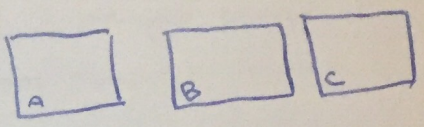
candles were made by the Romans beginning about 500BC candles were primarily made from tallow and beeswax in ancient ~~room~~ times. Modern candles are made from stearic (purified animal fats) and paraffin wax. Candles provide light for people in the dark knight. The human body undergoes hot combustion.

HUMAN		CANDLE	
IN	Oxygen (O_2)	**IN**	Oxygen (O_2)
IN	Fuel- food ($C_6H_{12}O_6$)	**IN**	Fuel- wax (C_nH_{2n+2})
OUT	Carbon Dioxide (CO_2)	**OUT**	Carbon Dioxide (CO_2)
OUT	Water (H_2O)	**OUT**	Water (H_2O)
OUT	Energy-ATP	**OUT**	Energy-Heat
		OUT	Energy-Light

The Heart of a Candle Flame

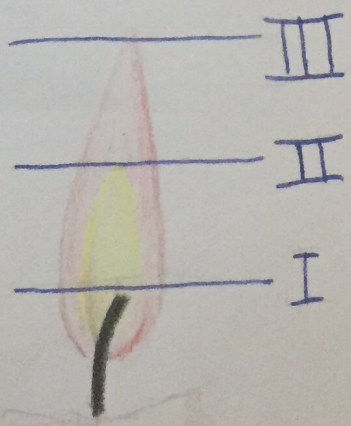
Materials

- Candle
- Matches
- 3 pieces of paper labelled A-C



Procedure

1. Light a candle
2. Place paper (A) in the candle flame at point I (see diagram below) - just above the wick for 3 seconds and remove.
3. Place paper (B) in the candle flame at point II - centre of the flame for 3 seconds and remove.
4. Place paper (C) in the candle flame at point III - Top of the flame for 3 seconds and remove.

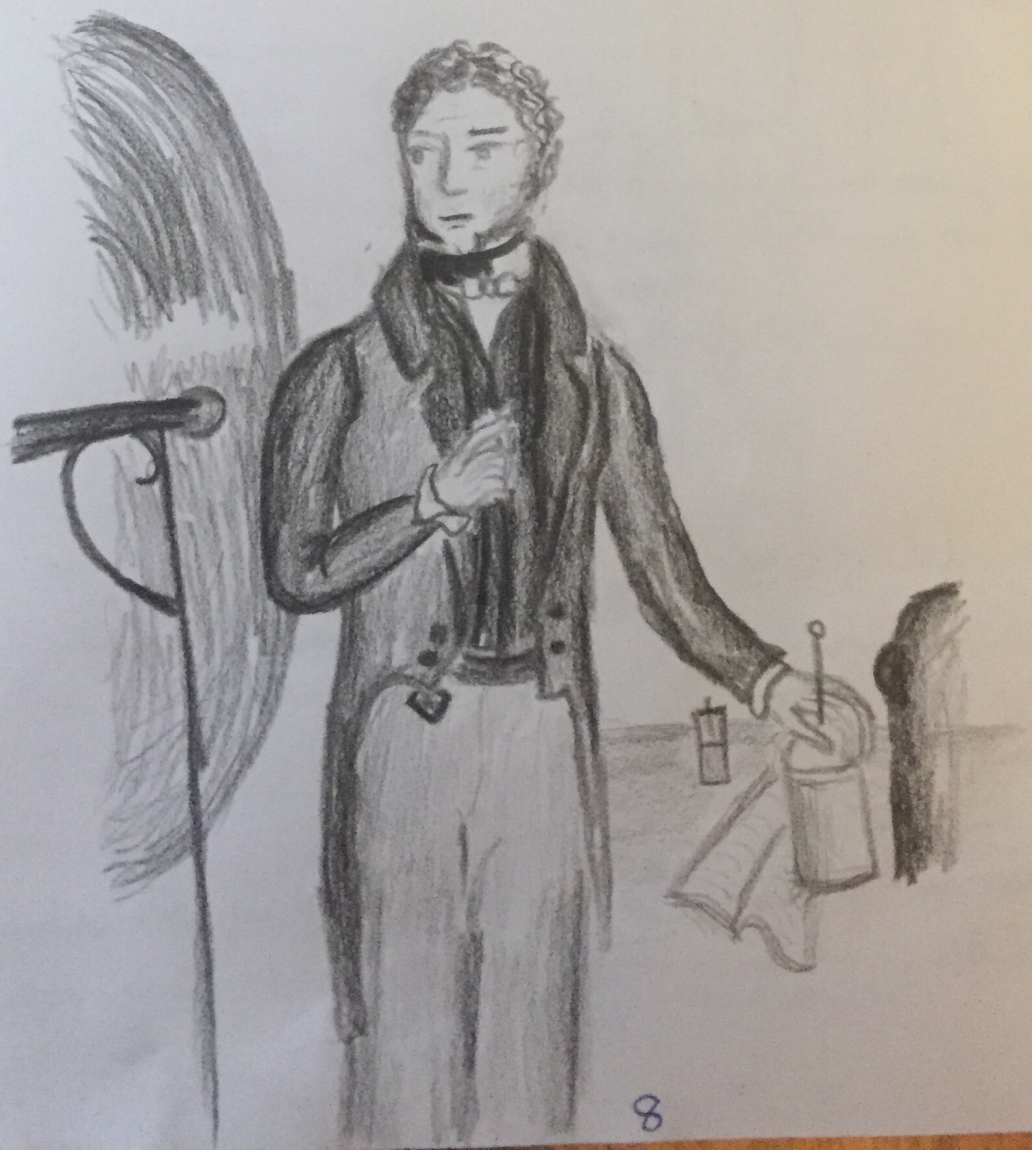


FARADAYS CANDLE

In the winter of 1859, Michael Faraday a great british scientist gave a number of lectures for young people. The talks dealt with one subject only: The features or phenomena of a candle

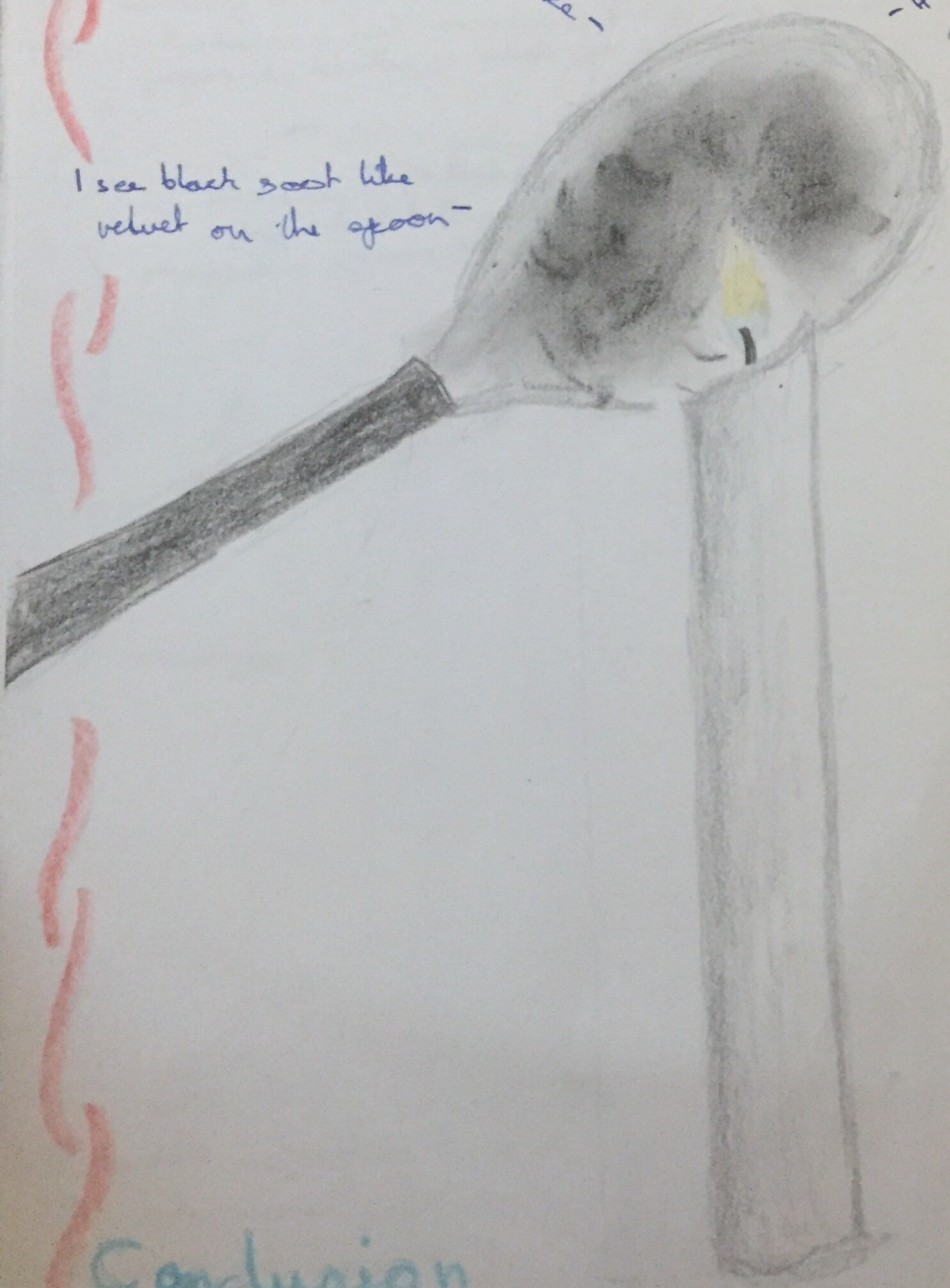
There is no law, Faraday told his listeners, Under which any part of the universe is governed which does not come into play, and is touched upon in these phenomena. There is no better, there is no open door by which by which you can enter into the study of natural philosophy than considering the phenomena of a candle.

He then set out to prove his point by lighting a candle and demonstrating all processes involved. In burning a candle you start with a solid substance that turns, first, into a liquid then into a gas in combustion, the candle produces energy in the form of light and heat an produces carbon dioxide.



What Does Combustion Produce

Carbon



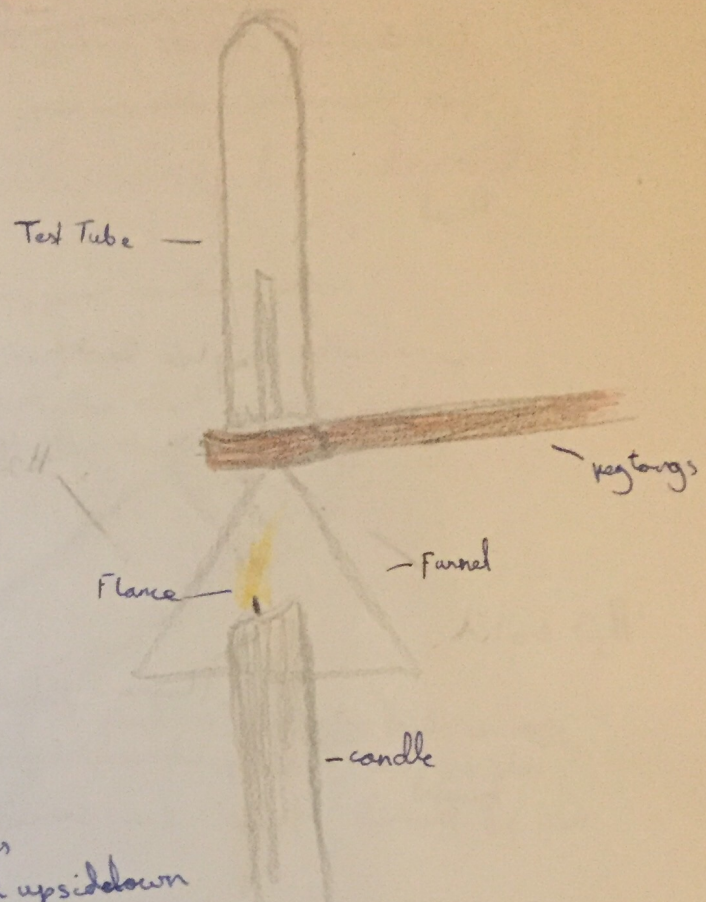
Conclusion

When sara put the bottom of the spoon close to the candle flame the carbon from the candles combusting wax accumulated the carbon on the spoon.

Capturing Gas

Materials

Candle
Beaker
Matches
Funnel
Bromothymol blue (Indicator)
Tongs (pegs)

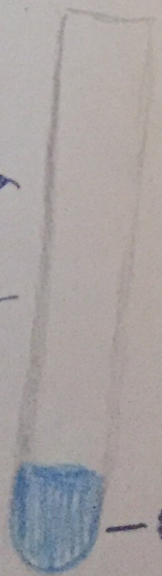


Procedure

1. Light matches
2. Light the candle with matches
3. Use tongs to hold the funnel upside down
4. put test tube on the pointy end of the funnel resting on the tongs
5. hold the open end of the funnel about 3cm over the candle and gently rotate for five minutes.
6. pour about 1cm of Bromothymol into the test tube
7. swirl for 3-5 minutes

Observations

The blue liquid went first green then stay yellow.

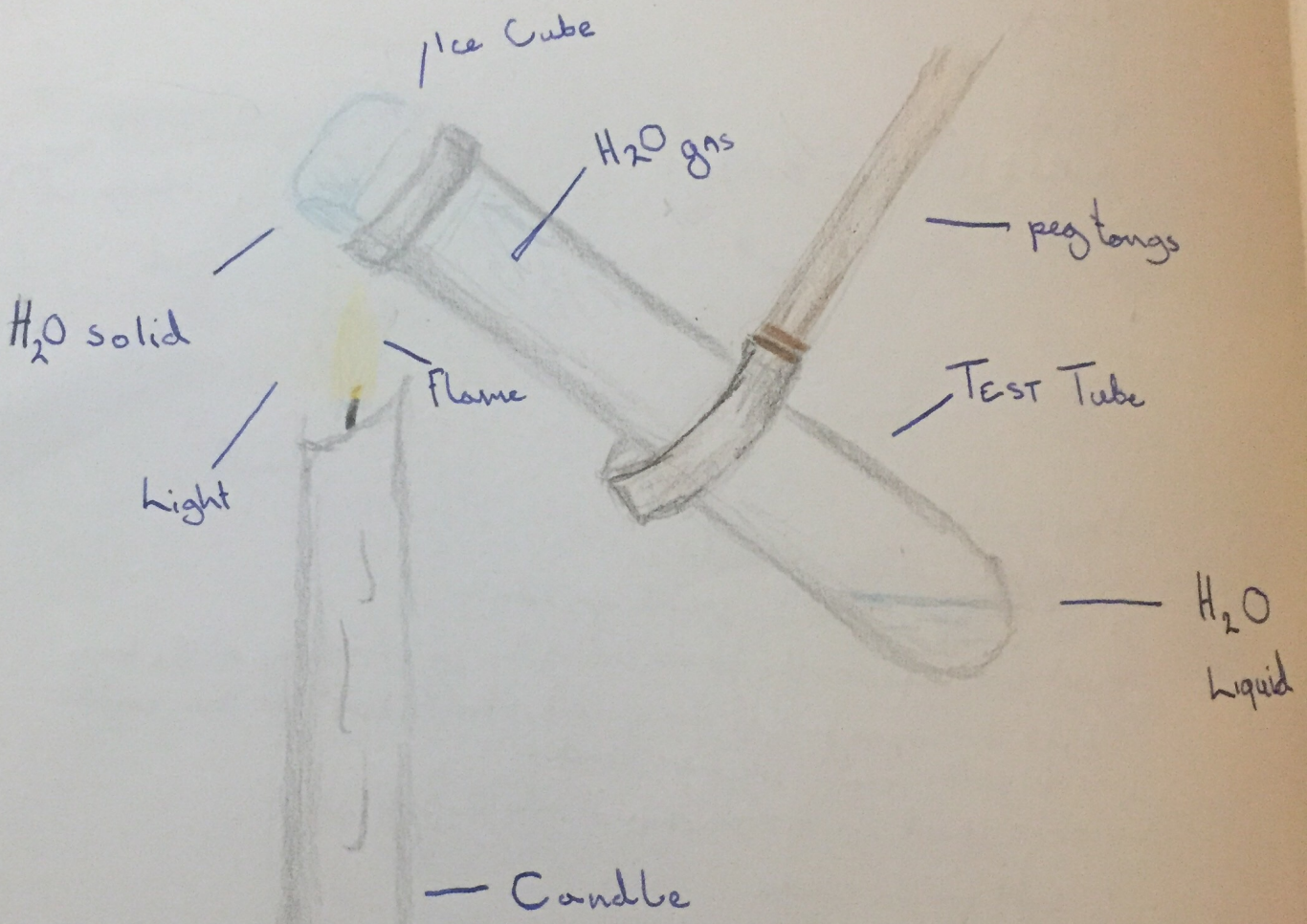


Conclusion

In conclusion the gas that was captured in the test tube was CO_2 or carbon dioxide. The carbon comes from the wax which is a hydrocarbons. The O from CO_2 comes strait from the air

Energy From Combustion

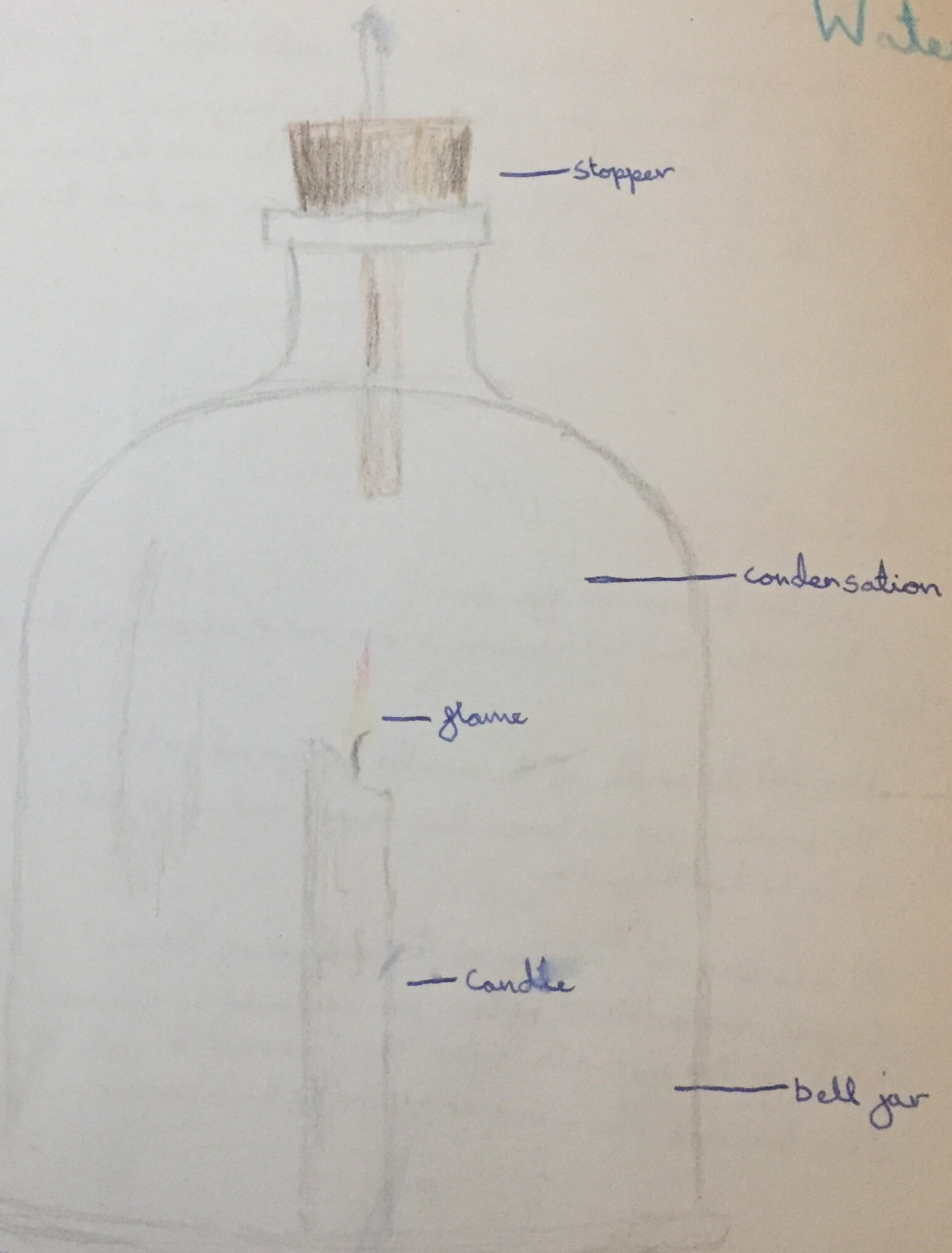
Materials and procedure and Observations



What does Combustion Produce?

procedure and observations

Water

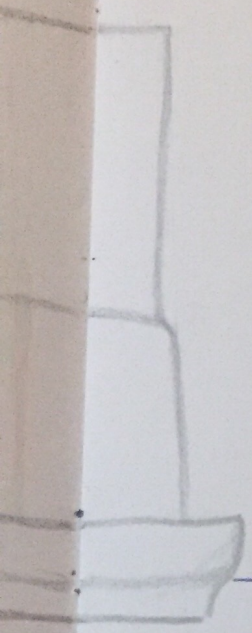


Conclusion

Water will condense on the inside of the sealed bell jar, that contains a burning candle. The water comes from the candles wax when it is combusted. The wax contains hydrogen and carbon.

Observations

This experiment started off with a lit candle stuck to an upside down jar lid. Then we were told to guess how long it would take for the candle to go out when she put the jar over the candle; then we timed it and came up with ~~out~~ seconds. Then we did the same process with the cup and got 9 seconds.



Questions

Why did the candle go out?
The candle went out because it ran out of oxegen in the jar.

Why did the candle of the smaller jar go out first?
The smaller cup contains less oxegen and so it takes a shorter time for it to be depleted faster.

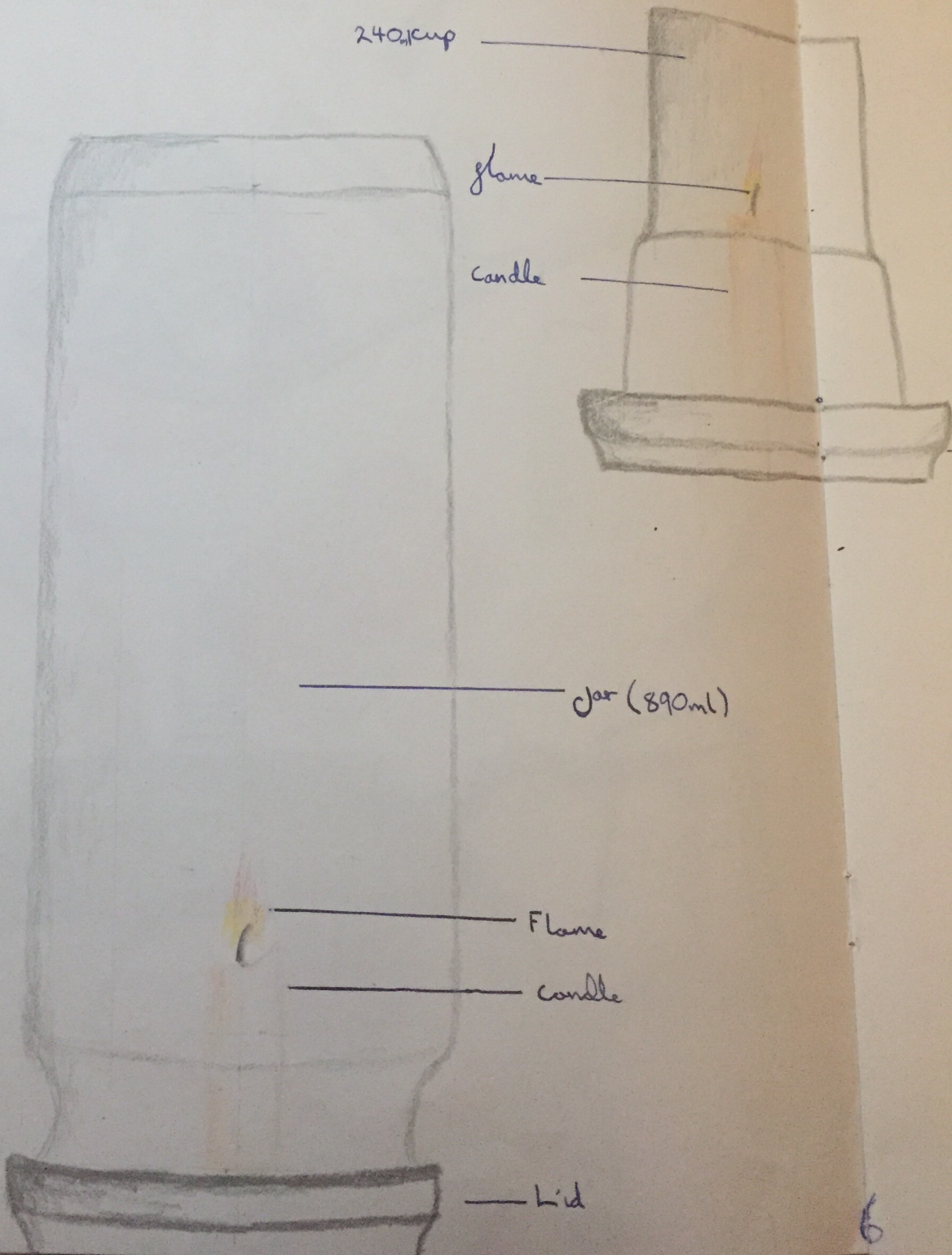
Describe how to measure the volume of the jar?
To find the volume of the jar we used a measuring cup. To do this we filled up the jars with water then removed it with the measureing cup. Then timesed the number of cup by the measure cups volume.

Conclusion

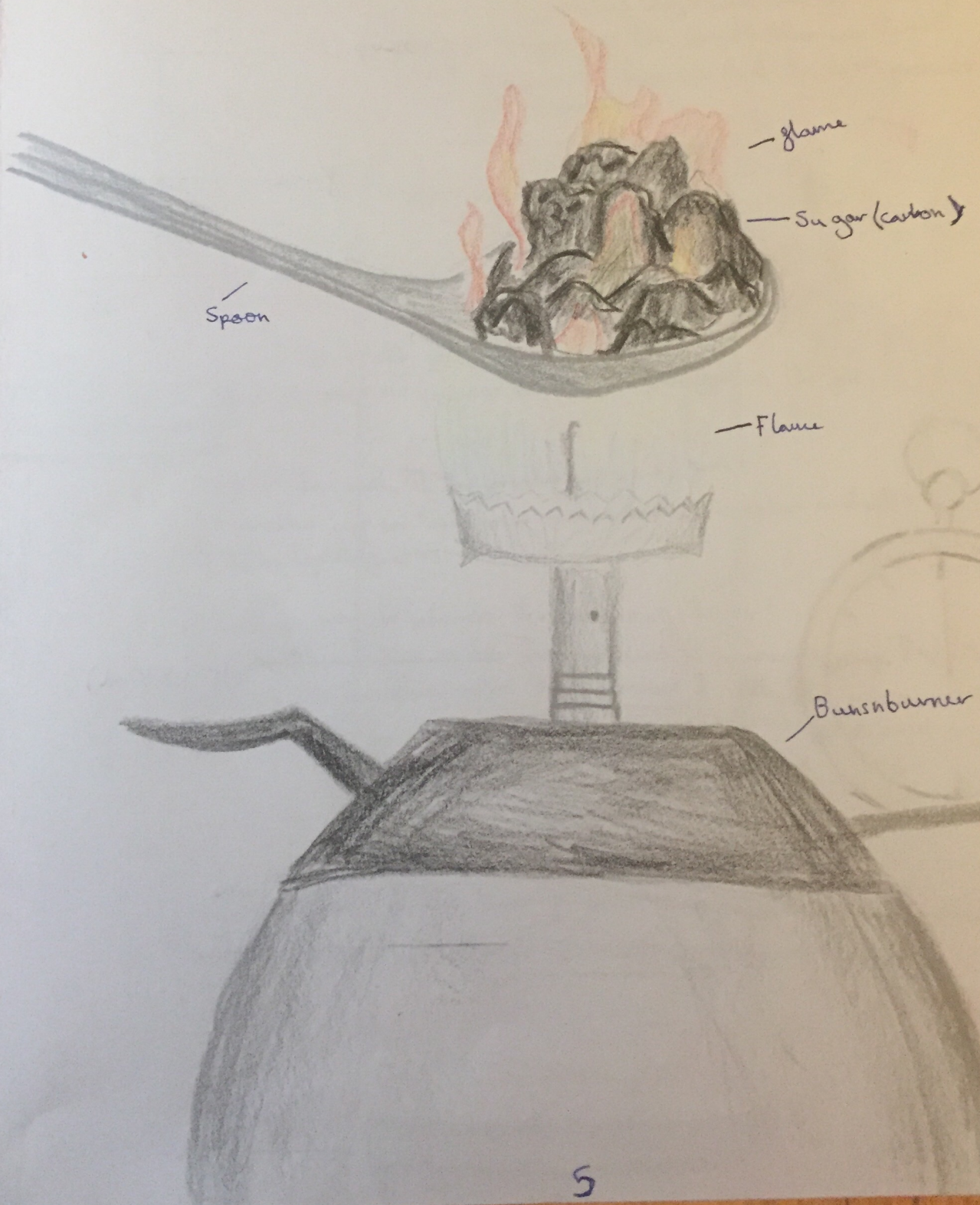
In conclusion, in this lesson I learnt that combustion needs oxegen to live and burn properly. And if it doesent have oxegen it dies.

What Does Combustion Need

Procedure and Materials



Sugar Combustion



Relighting A Candle

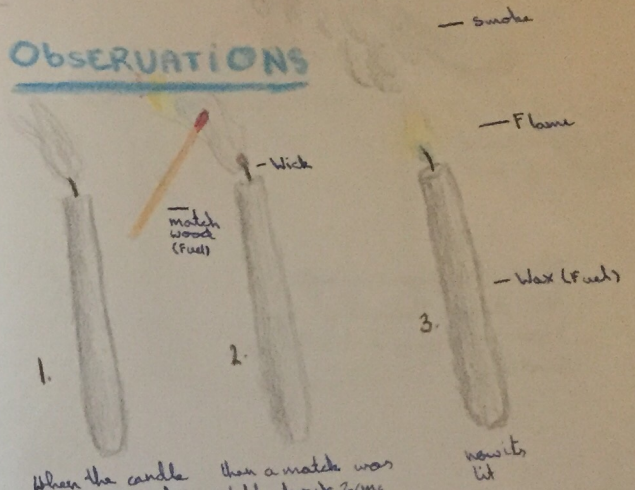
Materials

- Candle
- match

Procedure

1. first light a candle then let it burn for a while then put out the candles flame
2. light a match
3. put the match in the smoke coming from the wick about 2 cms away from the wick
4. the flame should jump to the wick if it doesnt do it again.

OBSERVATIONS

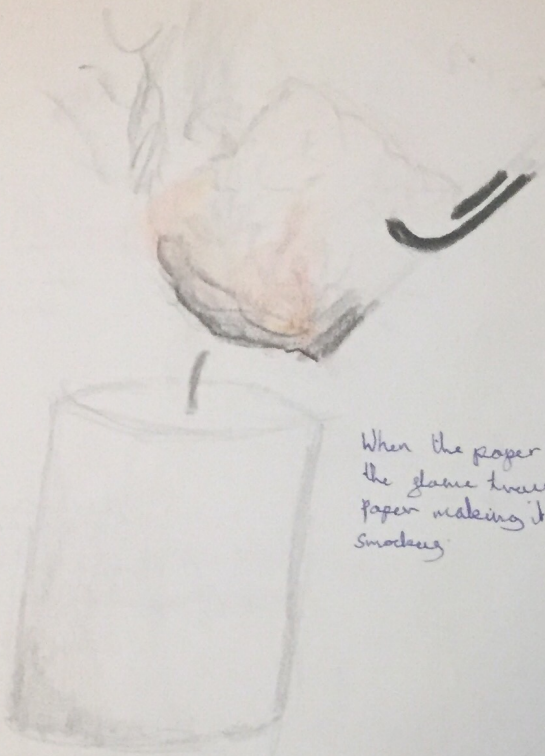


When the candle was blown out, smoke issued from the blackened wick.

then a match was held about 2cms away from the wick in the third smoke then the flame jumped to the wick this was because the smoke acted as fuel for the flame and as the flame ran along the smoke and lit the wick

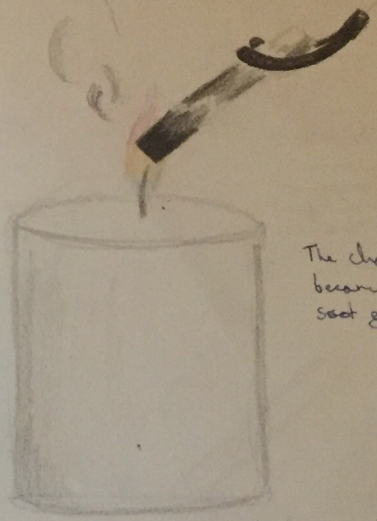
now it's lit

Burning Fuels

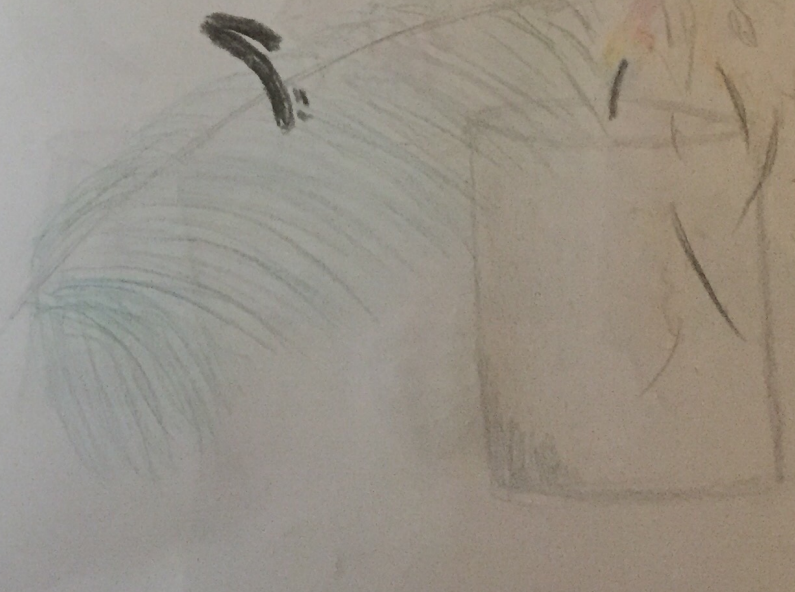


When the paper caught fire the flame travelled up the paper making it black and smoking.

When the cotton wool caught fire it blazed strongly for a second making the whole thing black and then went out, and it was really hard to relight. It also made a really bad smell.



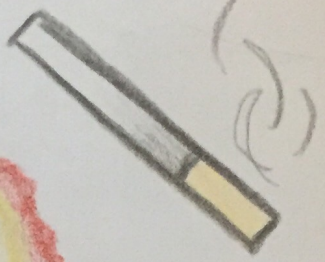
The chalk did not light but it became covered in black soot from the candle.

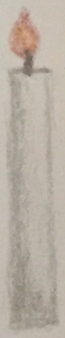


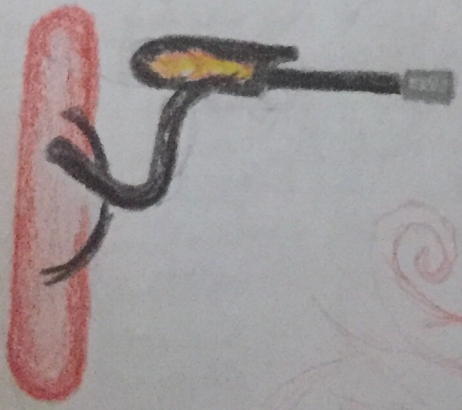
When the feather was burnt it sort of disintegrated with blackened feather fell off and it stop burning again

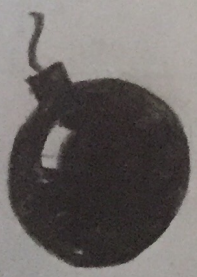
The Birth Of Modern Chemistry

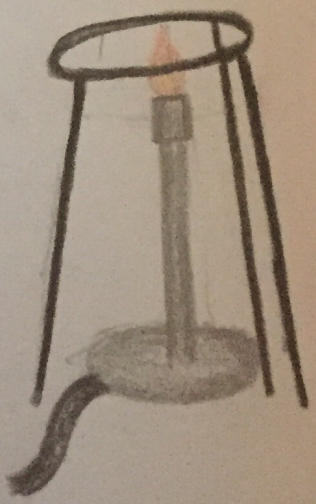
Many thousands of years ago, an early person pushed a stick into lava flowing from an erupting volcano. The stick burst into flames. It was used as a torch. It gave off light and heat and gradually turned to ashes. This was the worlds first chemist. The discovery of fire was the first great step leading to modern day chemistry.











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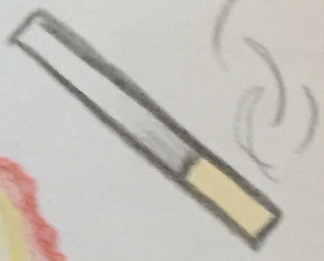
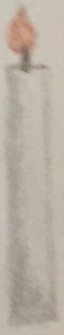
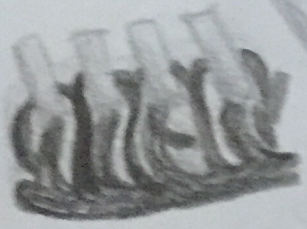
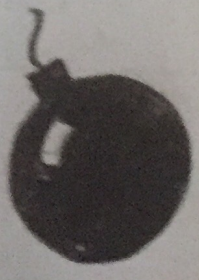
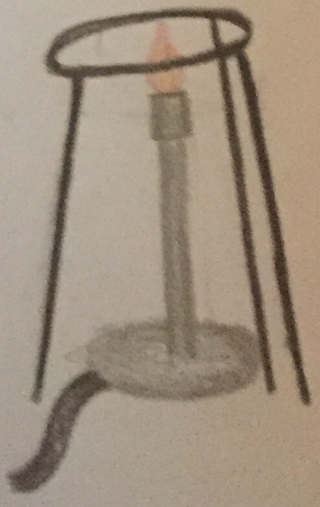










COMBUSTION

"From what by fires might is Grasped
Remains neither earthbound nor formless flame
It vanishes into inviesable spheres
And rises upward, from whence it came"

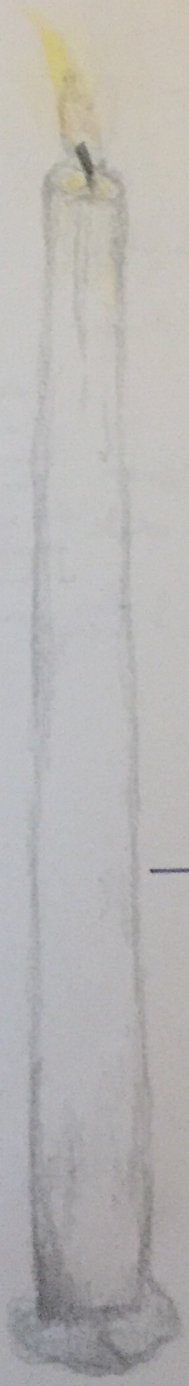
Table Of Contents

Candle Study

What I smelled when I was observing my candle was a sharp burning smell

What I heard when I was observing my candle was nothing. I didn't hear anything.

What I got when I touch my candle is a smooth waxy texture with lumps where the wax has risen and warmth from the flame



_____ Wax (fuel)