

ExxonMobil

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Week 1 #SolveItWithSTEM@Home Experiment Pack for Secondary Schools

featuring Alice and Eddie - our STEM Gurus



Hi...my name's Alice and I am a Chemical Engineer at ExxonMobil Fawley and part of the STEM (*Science, Technology, Engineering, Mathematics*) Team.

Between Eddie and I, we will be providing you with a variety of experiments over the next few weeks. We hope you enjoy and get involved!

Something to think about when taking part in the Volcano experiment...

Make sure you do this outside and with an adult present.

Hey, I'm Eddie!



Experiment #1: The Volcano

(Make sure this experiment takes place outdoors and **alongside an adult!**)

Items Required:

1 x bottle of coke (diet or regular)

8 x Mentos mints

1 x balloon

For the full volcano effect, you can create a papier-mâché volcano to build around the bottle of coke.



Instructions:

- Take the Mentos and crush into small chunks – place these pieces into the balloon and twist the end of the balloon. This prevents the Mentos from entering the coke too quickly.
- Take the lid off the bottle of coke and place the balloon opening over the coke bottle.
- Untwist the balloon to allow the Mentos to drop into the coke bottle.
- Pull the balloon off and stand well back.

How does it work?...

If you look at a Mentos close up, it's very similar to the surface of the moon – it has tiny 'craters'.

When dropped into a coke bottle, the tiny 'craters' provide space where the CO₂ molecule can change to gas.

As a Mentos has so many 'craters', the theory is that millions of CO₂ bubbles are formed in a very short space of time.

As the candy sinks to the bottom and the rapid release of gas happens at the bottom of the coke bottle – this creates the volcano explosion effect!

They test this theory on the following Youtube video:
<https://www.youtube.com/watch?v=LjbJELjLgZg>



Week 1 Wordsearch!

1. Atoms are chemically joined together by strong forces called
2. Copper + Oxygen =
3. Coal, oil and natural gas are widely used fuels that contain
4. A is a substance that speeds up reactions.
5. What greenhouse gas contains one carbon atom and surrounded by four hydrogen atoms? It can be used to heat and generate electricity.
6. What element is *Na* in the Periodic Table?
7. What acid do lemons produce?
8. Solutions can be acidic, alkaline or
9. The pH scale ranges from zero to
10. Within the reactivity series, which metal is the most reactive?

S	T	I	U	O	D	P	M	I	C	D	E
Q	B	O	N	D	S	O	U	X	E	D	P
F	B	L	U	E	O	T	I	H	I	R	T
O	T	A	S	C	D	A	D	X	D	I	P
U	S	R	M	J	I	S	O	H	J	L	S
R	Y	T	J	H	I	R	S	A	Z	K	X
T	L	U	O	N	E	N	A	H	T	E	M
E	A	E	W	P	J	U	I	S	A	Q	T
E	T	N	P	O	T	A	S	S	I	U	M
N	A	O	B	T	E	L	I	H	C	D	G
A	C	D	I	C	A	C	I	R	T	I	C
H	Y	D	R	O	C	A	R	B	O	N	S

I've put together a wordsearch for you but in order to find the words, you need to answer the questions! Once you have the answers, give it a go!

The correct answers will be included within next week's pack...stay tuned!



We hope you enjoyed the Week 1 activities.

Week 2 will be coming soon.

Best wishes

The ExxonMobil Fawley #SolveItWithSTEM Team!