



SIXTH SUPPORT

THE MAGAZINE COMMITTEE

Friday 3rd April 2020

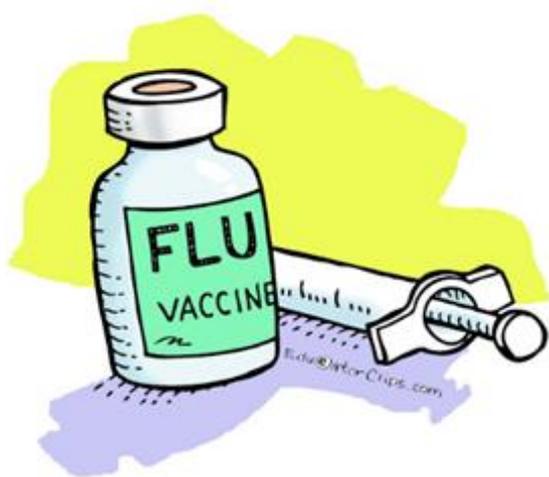
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THE IMPORTANCE OF ISOLATION

BY AVA B.

Those of you who have studied immunity in biology will understand that viruses, like Covid-19, aren't treated by antibiotics. Vaccines are what protect society from viruses such as the flu, providing majority of the population have this vaccine, causing herd immunity and reducing the spread. However, this is not a cure. Hence the reason the government are limiting social interactions, to reduce the spread before a vaccine is available.



Viral load is another important factor considered. Viral load is

what determines the severity of the case before you even know you have it. For instance, upon inhaling droplets containing the virus, if a small amount were to enter your blood stream, you'd have a very mild case. However,



to continue to socialise once the virus is present in your bloodstream, not only could you be inhaling more, potentially worsening your symptoms when you get them. But, also spreading the virus to other people without even knowing. Furthermore, the stress on isolation is so important to halt the virus and to stay inside for the minimal time possible.

Chemistry

BY KATIE G.

CHEMISTRY IN THE NEWS

This week, the first ever observation of a neon containing anion* occurred! Neon is a member of the noble gases, and as a group are unreactive, so for an anion* to be formed including neon is quite cool. Neon containing cations** have occurred in the gas phase but are unlikely to become compounds. The neon anion* is actually a molecular anion*, and also contains a boron atom, which while remaining negatively charged overall, has a positive partial charge.

The formula of the anion* is $[B_{12}(CN)_{11}Ne]^-$ and is the first step in creating a neon salt.

*anion- a negatively charged ion

**cation- a positively charged ion

Ion- an atom or molecule with a charge due to losing or gaining one or more electrons.

QUICK QUESTION

Organic chemistry is the study of the compounds that make up living organisms. All organic molecules contain:

- A Carbon only
- B Carbon and nitrogen
- C Carbon and hydrogen
- D Carbon, hydrogen and oxygen

ELEMENT OF THE WEEK! Rhodium

- Rhodium is a silvery white metallic element that is very reflective and resistant to corrosion.
- It is the rarest and most valuable precious metal in the world, higher than gold or silver!
- Its name comes from the Greek word "Rhodon", meaning rose, for the rose colour of its salts.
- Atomic number is 45
- Atomic mass is 102.91
- Only occupies 1 part per 200 million in the earth crust. An alloy of Rhodium mixed with platinum is used in pacemakers, but alloys of Rhodium are most commonly used in the catalytic converters of car exhaust pipes.



EASY AT HOME CHEMISTRY EXPERIMENT RUBBER EGG EXPERIMENT

1. Hard boil an egg
2. Place the egg in a cup or jar of vinegar
3. Leave the egg undisturbed for a day
4. Take the egg out and wash it carefully. The egg should now feel rubbery!

The science behind the experiment: the dilute acetic acid in the vinegar 'eats' the calcium carbonate in the shell, leaving just the inner membrane behind. This is because when a carbonate and an acid react, the products formed are a salt, carbon dioxide, and water.

<https://melscience.com/US-en/experiments/egg-in-acid/>

HISTORY

BY EMILY N.

We are currently living through one of the most significant historical moments of our lives. In the future, history lessons will teach about the plague, cholera, Spanish Influenza and Coronavirus. This means that we have the rare opportunity to influence how later generations view our reaction to current events. Therefore, an interesting way to pass time whilst also having an impact may be to keep a journal that could, one day be used as a primary source in a History student's thesis or evidence in their exam.

Podcasts are also a really great way to pass time whilst studying something new, or recapping things you have already learnt. Here are a few good ones, all of which are

available for free:

- *How To Take Over The World* is an intriguing podcast that may guide you to world domination. It tells the stories of those that changed the world.
- *The Story* which focuses on individuals who had an impact on history. These individuals are often unheard of. Season 1 focuses solely on 12 amazing women.
- BBC's *In Our Time: History* which is hosted by Melvyn Bragg, each episode focusing on a various aspect of the past with experts of those times.

Another fun history pastime would be to watch old episodes of *Horrible Histories* which will always have relevance.

ABBAY COLLEGE PUZZLE PAGE

BY OLIVIA M

CROSS MATHS:

The puzzle must contain all the numbers 1 to 16, so that all of the equations are true. Some of the digits are already filled in: complete the puzzle!

1	-		-		+	14	8
X		/		x		-	
	+	2	x		-	11	14
-		+		+		-	
	/		x		-		21
+		+		-		+	
15	x	10	+		+	7	173
12		18		21		5	

COUNTDOWN:

Can you use the following nine letters to create one nine-letter word? You can only use each letter once.

S	A	S	I	T	T	E	E	D
---	---	---	---	---	---	---	---	---

SUDOKU:

The aim is to fill in the grid below so that each row, column and 3x3 section contains the numbers 1 to 9. Some of the squares are already filled in: complete the puzzle!

				2		5	6	8
	8	7	9	1		3	4	2
4	7		1	3				
	6	2		9				
	3		7	6		2	1	
		5	8				2	6
7			3		9	8	5	
8	9	1	2	5				3

BRAIN TEASERS:

1. When you have me, you immediately feel like sharing me. But, if you do share me, you do not have me. What am I?
2. Before Mt. Everest was discovered, what was the highest mountain in the world?
3. The number 8,549,176,320 is a unique number. What is so special about it?

LAST WEEK'S ANSWERS

ARITHMETIC CHALLENGE:

136, 4, 13

COUNTDOWN: $100 - 25 = 75$
 $75 \times 6 = 450$
 $7 - 3 = 4$
 $8 + 4 = 12$
 $450 - 12 = 438$

BRAIN TEASERS:

1. J, J, A (June, July, August)
2. Fire
3. Your breath

FIND THE PATH:

Start at the bottom left square and move up, down, left or right until you reach the finish.

4	9	7	7	4
8	9	4	5	7
6	6	4	9	9
7	8	8	8	6
5	5	6	5	5

Add the numbers as you go. Can you make exactly 53?

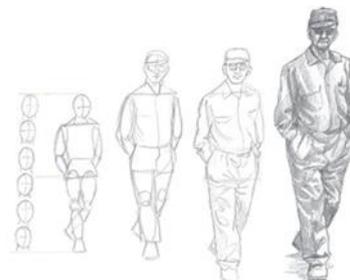
BY TEGAN T.

During this time we are all stuck for fun activities to do but don't worry, anyone can give it a go using pretty much anything in your home or garden! If you take art GCSE or A-level you are likely to have basics such as acrylic or watercolour paint, brushes, pens, pencils and paper but you can improvise with new things too:

- Running out of surfaces to paint on? Try painting on cardboard, a collage of wrappers or even inspire your inner sculptor by using materials such as strings, bottle tops, milk cartons, scrap paper/cardboard and many more to create amazing sculptures of things you love!
- If you get permission from your carer then you might be able to try interior decorating by up-cycling old furniture or painting on walls in the house!
- Even if you are just interested in art as there's not a lot else to do, give simple things like collages or scrap books a try to get you started.
- Struggling for inspiration? Many artists talk through their ideas with friends or family to get the ball rolling and although you cannot do this in person, you could try messaging or video calling. Alternatively, as many art students know, scrolling through Pinterest (even if it is just to spend some time not doing endless board games) is a great way to discover new styles and artists you love!

Resources to use for inspiration or advice are always useful so here are a few of my favourites:

- Pinterest – to find artists or fun photos for inspiration
- Your own camera roll - Scroll through it and choose a random photo to turn into art



ENGINEERING

The Battle Buddy

At the USC Institute for creative technologies, computer engineers are developing virtual reality and simulated human characters which can be developed for the military. Nicknamed the 'battle buddy' a virtual human agent can interpret data from wearable devices, where it detects languages, answer questions, monitor patient recovery and help hospital staff answer calls. Due to the rapid patient growth, hospitals are severely under pressure, hence a battle buddy with these skills are important and needed now. At this point in time, HP are designing PPE such as facemasks with 3D printed parts which are much more effective in preventing the spread of coronavirus. They have also began testing designs for other applications, such as a bag valve mask, which is a short-term use emergency ventilator.

This figure shows the 3D printed parts for a ventilator component, which will be mass produced and donated to the global engineering community.



Engineering Updates

Cool website: engineeringworldchannel.com – explore and discover more about engineering, tests your engineering concepts, find out latest inventions, suggests tools which can make daily activities easier.

QUESTION OF THE WEEK:

Why are rollercoasters made of steel and not wood?
Also, if titanium is much stronger than steel, why don't we use titanium to build rollercoasters and not steel?
Answer to the Question will be available next week.



MUSIC

BY ELEANOR P.

During the time of self-isolation and, aside from your school work, you may be wondering what you could do to fill the free time you now have. Why not use music to do so?

Whether you are at an advanced level of performance, simply wanting to start playing an instrument or desire the right choice of music to accompany your revision, music can be incorporated (usefully) to benefit you in the time available. Over the coming weeks, there will be useful information available on aspects such as performance tips, listening exercises and playlist suggestions. There may even be opportunities for you to showcase what you have done!

Want to begin learning an instrument?

Apps such as *Piano Academy* allow you to learn the basics (such as note-naming), right up to playing current popular songs.



Piano
Academy

The piano is a versatile instrument which is used in many genres of music, with the app giving you an on-screen keyboard to learn from the luxury of your own device!



Don't fancy the piano? Other apps, such as *Yousician* give you step-by-step tutorials for instruments such as the ukulele, to fill your time.

Already play an instrument?

Musescore allows you to access sheet music, free of charge, for most instruments. Simply type in the desired title into the search box and select your instrument to find a wide range of arrangements! Also, *Musescore* offers free notation and composing software for those who wish to create their own pieces.

Film Music and Studying?!

Interestingly, some people find it easier to study with music, specifically from films or video-games. This has psychological links, allowing the listener to be transported into their favourite scene of a movie or a game which they enjoy playing; this takes the stress off of the task that is being undertaken and makes schoolwork easier at what can be an overwhelming time. YouTube may be useful in listening to this music – instrumental soundtracks are the best for revising to. After you have studied using the music from your favourite film, reflect and appraise the piece – use the example below to start with.

Listen to *Simba is Alive!* by the world-renowned film composer, Hans Zimmer, from the motion-picture, *The Lion King* (2019).

- What features give the piece an uplifting character?
- Which instruments are used?
- Soundtracks accompany scenes within a movie. Describe what may be happening at this point in the movie, as depicted by the music.

BUSINESS

BY ZOE JENKIN

How Has Business Been Affected By Coronavirus?

Business will be (and has been) affected by the Covid-19 virus in a variety of ways. Not only do the consequences of this virus impact all businesses across the world, but it will have a knock-on effect on the topic matters throughout your business course. When writing about any business, you are expected to consider current affairs that can change a business' success and performance and analyse this in detail. The virus has been the cause of so many factors to alter in order to control it; this is from the self-isolation of people at risk to a national closure of schools and businesses that are not recognised to be essential.

With so many global changes being made as a result of the virus, it is now most likely significant to take this into consideration when writing up the coursework.



LINGUISTICS

B MARTA J AND PAIGE M



Etymology

This is the study of the origin of words, and here are some examples!

- The word 'aguacate' translates to 'avocado' and it means 'a dark green pear-shaped fruit with smooth, light green pulp and one large seed in the centre'. It changed from the Spanish word 'aguacate' to 'avocado' in 1700.
- The word vaccination originates from the Latin word 'vacca' meaning cow. This is because the first vaccination was created in 1796 when Edward Jenner discovered that the milk maids who caught and recovered from cowpox were immune to smallpox (a much more lethal disease), so he injected cowpox into many people (including his own son) and found they all became immune to smallpox, creating the first ever vaccination.



Grammar tip!

A contronym is a word with completely opposing meanings. They may have originated when different meaning (but similar sounding) words joined together over time, or when one word gained different meanings over time.

Examples:

- The English verb 'dust' meaning both 'to remove dust' and 'to -sprinkle with soil or dust'
- The Latin word 'sacer' translates to 'sacred' as well as 'accursed'
- The Romanian verb 'inchiria' meaning 'to rent' yet also 'to let'

Spanish song of the week:



Sofia, by Alvaro Soler

This song is very good for people learning Spanish as it's easy to sing along to. It's also a great song to dance to!

Top learning resources

Now is a great time to pick up new skills, for example learning a new language. Whether you're learning a language for GCSE, or simply trying to learn a few words to use on holiday, it may seem tricky at first. Luckily for you there are so many different apps, websites and videos that can help. Here are some of our favourites!

-lyricstraining.com

-www.duolingo.com

-<https://www.youtube.com/watch?v=0HeR56t6>



GEOGRAPHY

BY CONNOR S.

Websites and resources

<http://www.coolgeography.co.uk/>: covers all year groups, topics and also case studies. This site also contains small quizzes and questions at the end of each topic

<https://www.senecalearning.com/>: this is a great site for testing yourself with different topics within geography. It covers every single topic of GCSE and with the new update will record questions you get wrong so you can review them later.

<https://www.aqa.org.uk/find-past-papers-and-mark-schemes>: AQA past paper sites

<https://filestore.aqa.org.uk/sample-papers-and-mark-schemes/2018/june/AQA-80351-QP-JUN18.PDF>; geography paper 1 exam paper practice (geography paper)

<https://filestore.aqa.org.uk/sample-papers-and-mark-schemes/2018/june/AQA-80352-QP-JUN18.PDF>: geography paper 2 exam paper practice (human paper)

<https://filestore.aqa.org.uk/sample-papers-and-mark-schemes/2018/june/AQA-80353-QP-JUN18.PDF>: geography paper 3 exam paper practice (geographical skills)

Top Tips

- Review your case studies regularly
- Know your key terms and landforms
- Case studies can be used as examples in 4-mark questions and above
- https://www.geography.org.uk/write/MediaUploads/Get%20involved/GA_Secondary_Phase_Committee_Top_Tips.pdf

For Exam Tips Visit:

https://www.geography.org.uk/write/MediaUploads/download/GA_RETopTenRevision.pdf