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ISSUE 11, DECEMBER 2020

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Marsha Tudor Inspired Edit

Paige Savory

This stunning image was created by Paige Savory from Year 10 Photography, inspired by Marsha Tudor. Paige has captured the layers and vibrant colours of the flower as well as editing it in the style of the artist.



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Macbeth Performance

Class of 7C

Students had to adapt Shakespeare's famous banquet scene from the play Macbeth, individually constructing a script to then take outside and perform as a group. Being outside meant the class were not restricted due to Covid-19 and were still able to enjoy performing and engaging with Macbeth. Props were safely given to students to wear whilst acting out their scene. As you can see in the images, the students really enjoyed this element and it added that extra bit of enjoyment for them in these difficult times. Students produced amazing work and performed brilliantly to another group, showing what they are able to achieve.



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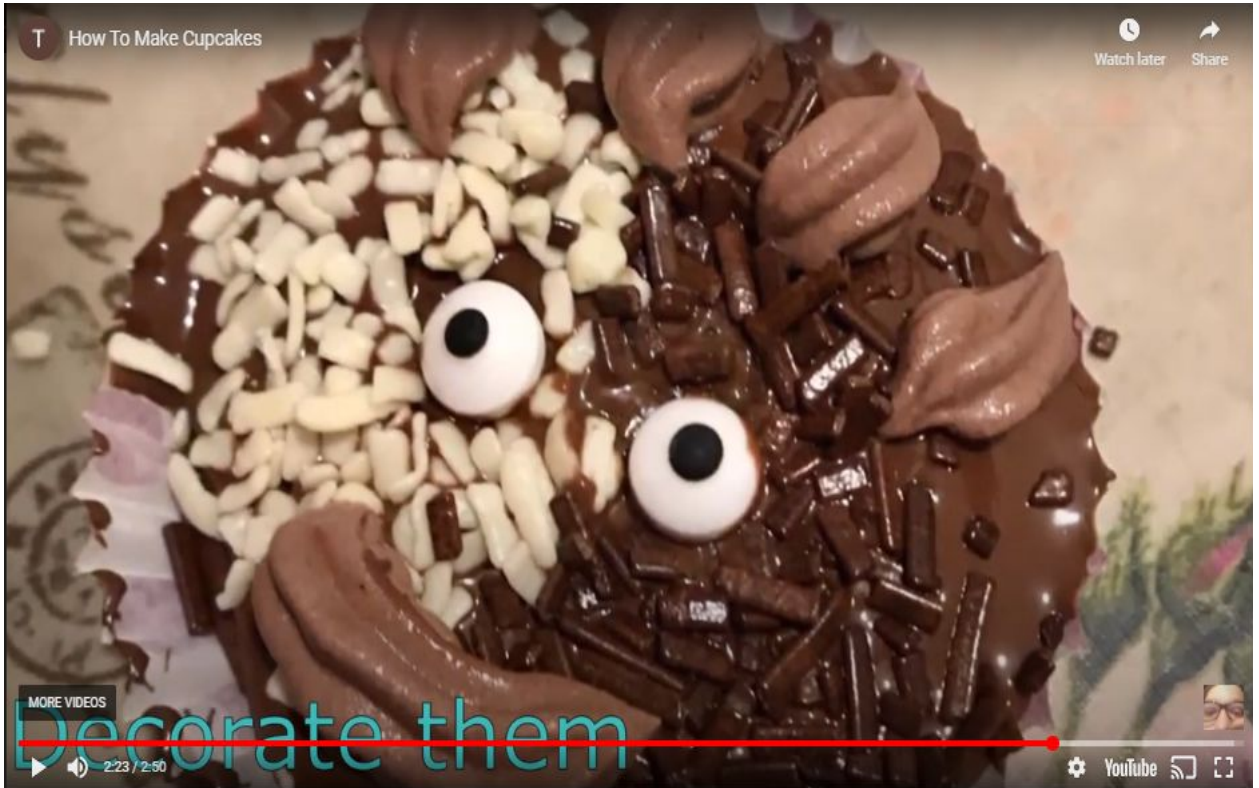
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Design and Make a Halloween Treat

Tommy Gharib

This task was set as part of the Year 8 Food Technology focus on 'World Food and Cultural Traditions'. Students were asked to choose a tradition or festival that is celebrated during autumn, and to design, make and evaluate their food product. Tommy's focus was Halloween and he decided to make some 'ghoulish' monster cupcakes. He presented his work as a film clip to showcase the range of skills used in producing these ghoulish treats. The monster cupcakes were a feast for the eyes and I'm sure, went down a treat! Well done Tommy, great work and keep cooking!



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5. Moles in 32g of O_2
 $\text{moles} = \frac{\text{mass}}{\text{Mr}} \rightarrow 0.25 \text{ moles } O_2$

6. Moles in 170g of NH_3
 $\text{moles} = \frac{170}{17} \rightarrow 10 \text{ moles of } NH_3$

Ch. Stoichiometry Tuesday 10th November
Starter

19. Molar Mass = Mass of one mole

2. Equation for calculating moles from mass.
 $\text{moles} = \frac{\text{mass}}{\text{Mr}}$

3. What is Avogadro's Constant
 6.02×10^{23}

Calculate the mass of

1. 20 moles of Fe
 $20 \times 56 = 1120g$

2. 2 moles of H_2SO_4

Exam Question

A bag of fertiliser contains 14.52kg of ammonium nitrate (NH_4NO_3)
Relative formula mass (Mr): $NH_4NO_3 = 80$
Calculate the number of moles of ammonium nitrate in the bag of fertiliser.
Give your answer in standard form to 2 significant figures

$14.52 \times 1000 = 14520g$
 $\frac{14520}{80} = 181.5$
 1.815×10^2
 1.8×10^2

Molar Ratios

The balanced equation indicates the number of moles of each substance that are involved in any reaction.
Example:
 $ZnCO_3 \rightarrow ZnO + CO_2$
1 : 1 : 1

1. Sodium hydroxide + Sulfuric acid \rightarrow Sodium Sulfate + Water

a) Neutralisation reaction
b) $2NaOH + H_2SO_4 \rightarrow Na_2SO_4 + 2H_2O$
c) 2 : 1 : 1 : 2
d) 4 moles of water.

$Fe + CuSO_4 \rightarrow FeSO_4 + Cu$

mass: 56g ?
Mr (Fe): 56
moles: $\frac{\text{mass}}{\text{Mr}} = \frac{56}{56} = 1$
mass = moles \times Mr
 $= 1 \times 63.5 = 63.5g$

Question: I want to make 127g of copper. What mass of iron must I react with copper sulfate?

moles: 2 moles
mass = moles \times Mr
 $= 2 \times 56 = 112g$

Uneven Ratios

What mass of iron would you need to react with excess aluminium to make 1120g of iron?

$Fe_2O_3 + 2Al \rightarrow Al_2O_3 + 2Fe$

mass: ? 1120g
Mr (Fe): 56
moles: $\frac{1120}{56} = 20 \text{ moles}$

Calcium carbonate breaks down on heating to produce calcium oxide + carbon dioxide gas.
A student heats 10g of calcium carbonate strongly in a crucible.

$CaCO_3 \rightarrow CaO + CO_2$

mass: 10g ? g
Mr (Ca): 100 56
moles: $\frac{10}{100} = 0.1$
 $0.1 \times 56 = 5.6g$

Excell!

Chemistry Exemplar Classwork - Molar Ratios

Ruby Churchyard

Great book presentation and clear working out for calculating mass of product made or reactants used from molar ratios. Green pen evident from self assessment of answers. A very difficult topic to understand so a huge well done to Ruby!



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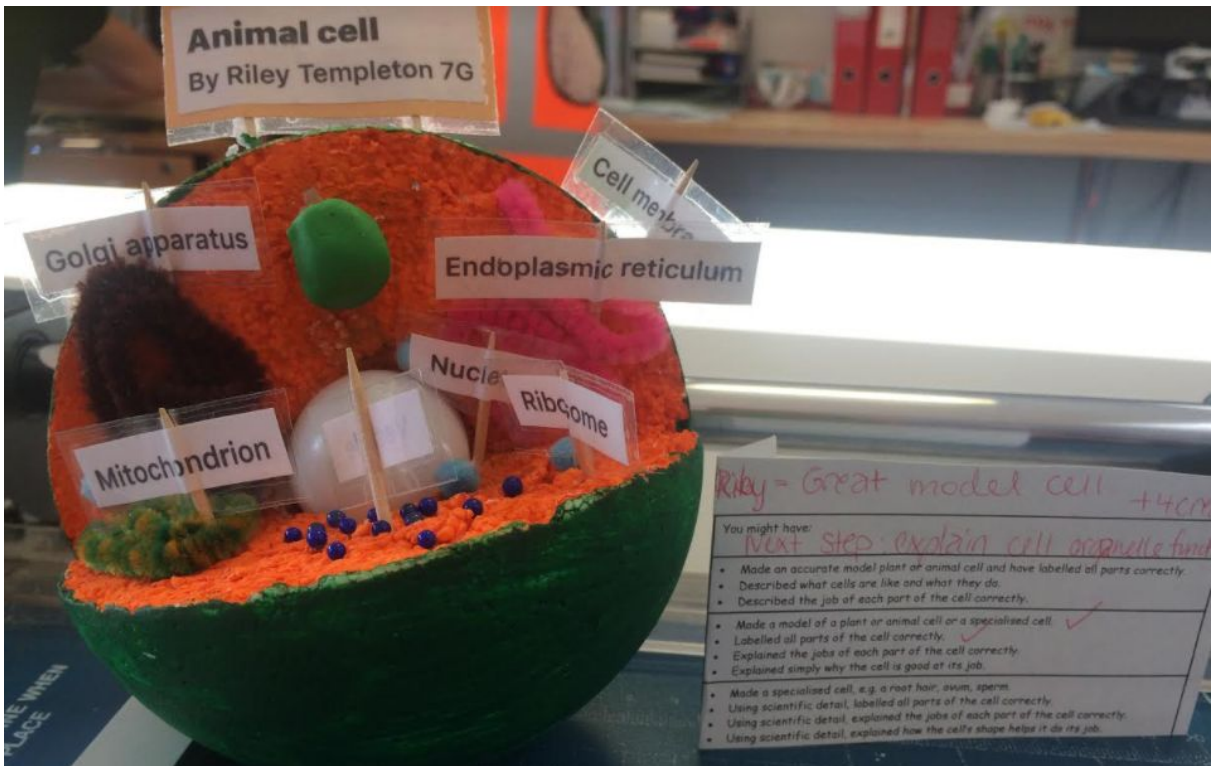
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Cell Models

Riley Templeton

A homework assignment was set asking pupils to make a model of the cell showing all of the intracellular organelles such as mitochondria, the nucleus and ribosomes. Riley produced a fantastic model from a polystyrene ball and pipe cleaners. As well as the model, a brief explanation of what each part of the cell does was also handed in. Well done Riley!



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Handwritten revision notes on chemistry topics, including Fractional Distillation, Burning Hydrocarbons, and Cracking Hydrocarbons. The notes are organized into sections with headings, sub-headings, and bullet points. A diagram of a fractional distillation column is included, showing the separation of crude oil into various fractions based on boiling point. The notes are dated Monday 16th November 2020 and Tuesday 17th November 2020.

Fractional Distillation (Monday 16th November 2020)

Address Check

1. Carbon + hydrogen
2. plants + sea animals
3. C_nH_{2n+2}
4. covalent
5. heating hydrocarbon

Outcome: Describe how volatility, viscosity and flammability of hydrocarbons are affected by molecule size.

Key words: flammable, viscosity, volatility, fractional distillation.

Crude oil itself has no uses \rightarrow it must be processed or refined in an oil refinery. Separate compounds in the oil into groups called **fractions**.

Generally, the larger a hydrocarbon, the higher its boiling point.

FRACTIONATING COLUMN

The oil is vapourised before it goes into the lower.

Short chains (top): refinery/petroleum gas (short-chain hydrocarbons and low boiling point alkanes, used as fuel), gasoline/petrol (used for fuel in car engines), kerosene (paraffin) (used for aircraft fuel), diesel oil/gas oil (used as fuel in diesel engines and as boiler fuel).

long chains (bottom): residue (bitumen) (very thick, sticky mixture of long-chain hydrocarbons, used in making roads and flat roofs).

Intermolecular Forces

Summary - the longer the chain the more intermolecular forces between them. Therefore requiring more energy to change their state.

LPG - gas cylinders, used for cooking.

Gasoline - car engines, imp removed.

Naptha - cleaning fluid, so removed.

Fuel oil - large industry boiler.

Burning hydrocarbons (Monday 16th November 2020)

Outcome: Describe the tests for products of combustion.

Keywords: oxidised, combustion, complete, incomplete, carbon monoxide, moxies.

Observations:

- heating with yellow flame, the ceramic became covered in soot (unburned carbon). white - black.
- methane + oxygen \rightarrow carbon monoxide + carbon + water (limited).
- heating with blue roaring flame, there was enough heat to burn off the excess fuels. black - white.
- methane + oxygen \rightarrow carbon dioxide + water ($CH_4 + O_2 \rightarrow CO_2 + H_2O$).

Gas test

- $CO_2 \rightarrow$ limewater \rightarrow cloudy
- $H_2 \rightarrow$ lit splint \rightarrow squeaky pop
- $O_2 \rightarrow$ glowing splint \rightarrow relights

Cracking hydrocarbons (Tuesday 17th November 2020)

Learning Outcome

- fuel + oxygen \rightarrow dioxide + water
- from animals/plants millions of yrs ago.
- water = cobalt chloride paper B \rightarrow W/ limited A/E.
- hydrocarbon + oxygen
- poisonous / can kill

Outcome: Explain how and why larger less useful hydrocarbon molecules are cracked to form smaller ones.

Keywords: Cracking, Alkene, double bond, unsaturated.

\rightarrow Supply and demand in fractional distillation doesn't match each other.

\downarrow Use a process called **cracking** (a catalyst that breaks down large hydrocarbon molecules into smaller molecules).

Forming Alkenes!

Alkenes - contain at least one double covalent bond, between carbon atoms. C_nH_{2n} .

Revision Notes

Aimee Alexander-Dedrick

Aimee has summarised extensive notes on fractional distillation of crude oil, burning hydrocarbons and cracking long chain hydrocarbons. This has resulted in a very concise revision tool summarising the key points in preparation for her PPEs and GCSE examinations.



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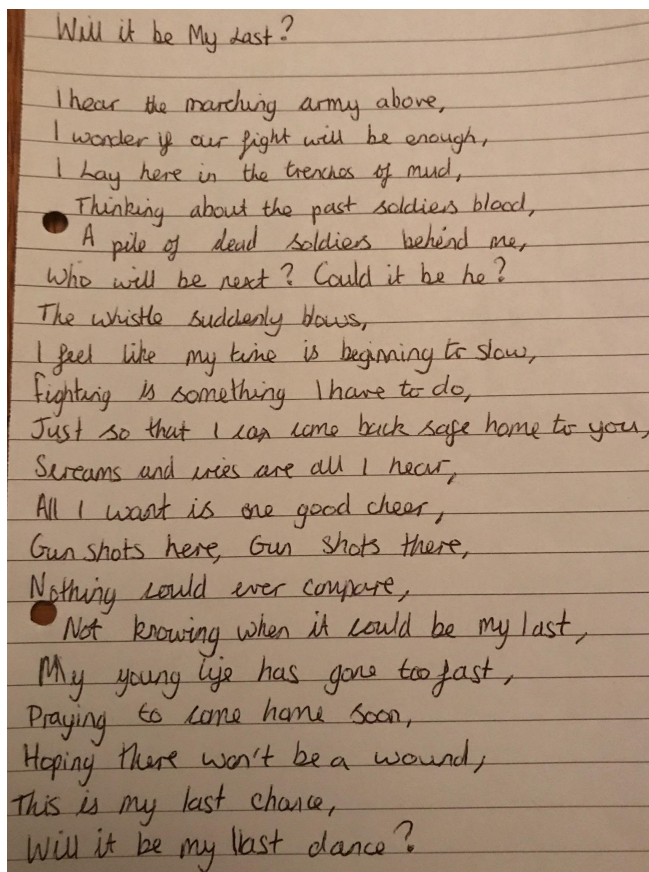
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War Poem

Lilly Dennis

This is a beautiful creative war poem by Lilly in 8B. The poem is focused on life in the trenches during WW1. It has a sombre and melancholic ending, using a metaphor to describe the soldier 'going over the top' comparing it to a last dance. Lilly has used a consistent rhyme scheme throughout her emotive poem which perfectly captures the harsh reality of war for young soldiers during this time. Finally, lots of the vocabulary used in the lines show a criticism of the WW1 generals' management of the army during this time. Well done Lilly, a fantastic poem!



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Colour Theory

Aimie Clare

This amazing cake was made by Aimie Clare for her Art homework to recreate the colour wheel. What a fantastic effort and I have also been told the cake was very yummy!



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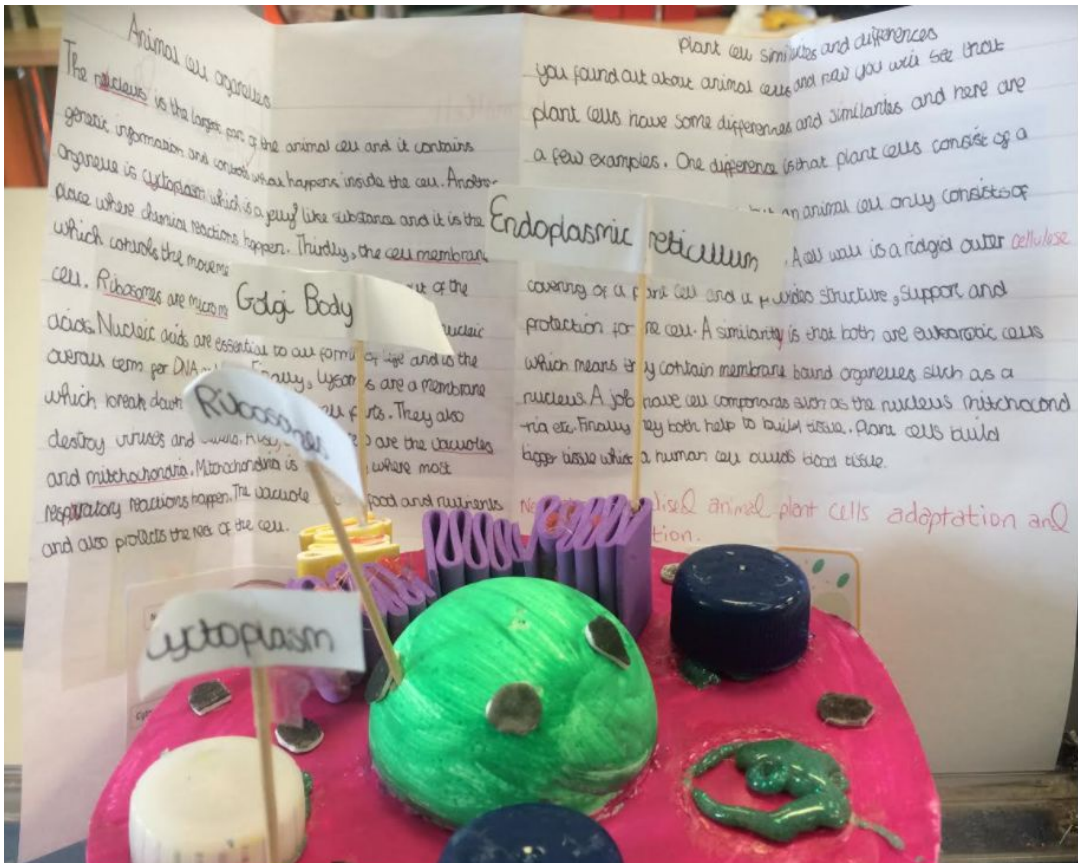
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Cell Models

Selvina Ramsay

A homework assignment was set asking pupils to make a model of the cell showing all of the intracellular organelles such as mitochondria, the nucleus and ribosomes. Selvina used a lot of recyclable materials to make her model which looks great. The best part of this assignment was the detail Selvina went into about the cell structure - detail that is expected at A level! Well done Selvina!



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Suzanne Saroff Inspired Edit

Honey Gee

Honey has developed her ideas well to create and edit an image which has been inspired by Suzanne Saroff. Honey has then edited this image to enhance the colours and create a strong contrast.



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November 2020

□ Bond breaking - Endothermic (requires energy)
□ Bond making - Exothermic (gives out energy)

Reactants: $2\text{H}_2 + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$
Products: $2\text{H}-\text{O}-\text{H}$

Draw out the displayed formula (usually given to you!)

Reactants (breaking)	Products (making)
$\text{H}-\text{H} \times 2 = 432$	$\text{H}-\text{O} \times 4 = 1856$
$\text{O}=\text{O} \times 1 = 498$	$=$
$= 1362 \text{ kJ/mol}$	1856 kJ/mol
TOTAL ENERGY TO BREAK BONDS:	TOTAL ENERGY RELEASED WHEN NEW BONDS FORM

KEY NOTE
⊖ = exothermic
⊕ = endothermic

OVERALL ENERGY CHANGE = break-make
 $1362 - 1856 = -494 \text{ kJ/mol}$

$\text{H}-\text{H} + \text{Cl}-\text{Cl} \rightarrow 2\text{H}-\text{Cl}$

Reactants: $1 \times \text{H}-\text{H} = 432$
Products: $2 \times 428 = 856$

$1 \times \text{Cl}-\text{Cl} = 240$
 672

break-make
 $672 - 856 = -184 \text{ kJ/mol}$

Exothermic

Great Calculations & Presentation

Activation Energy
The minimum energy needed to start a reaction (to start breaking bonds in reactant)

Reactants
activation energy
overall energy change (energy released)
Products

Reactants
Products

x = total energy absorbed to break bonds in reactants the activation energy
y = energy released when new bonds form

Bond Energies and Reaction Profiles

Sophie McCarthy

Sophie has successfully calculated the overall energy change of a reaction using bond energies and balanced equations. She has then interpreted the overall energy change correctly, determining the reaction was exothermic. Sophie then drew the correct reaction profile to represent changes in energy during the exothermic reaction.



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Colour Splash

Nancy Filer

This colour splash photography is by Nancy Filer from Year 9 Photography. Nancy has used the colour splash technique effectively to create a strong contrast between de-saturation and bold colour.



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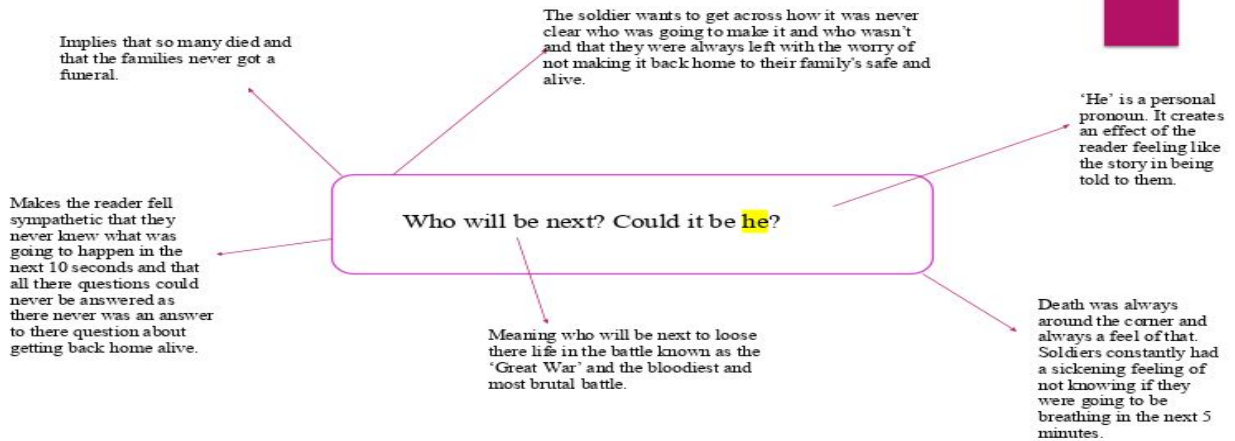
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What, where, how?

In the poem 'Will it be my last?' it implies the brutality of the first world war 1914-1918. This is suggested to me by the quote 'Who will be next? Could it be he?' The personal pronoun 'he' suggests that the writer is trying to engage the reader and let them know that it could be anyone. The message that the writer wants to get across is that it was never clear who was going to make it back alive and who wasn't, and that they were always left worrying about that thought. Furthermore, the quote creates a sense of fear as so many died and every second was a wonder of being you next. The purpose of the poem is to make the reader feel sympathetic for the soldiers as they could never get their questions answered as their main question was always am I going to make it. Also, it implies that death was always around the corner and that the soldiers constantly had that sickening feeling of it being them. The one thing that the soldiers didn't want was to lose their young lives in the 'Great War' during the bloodiest and most brutal battle.

Analysis of Poem

Lilly Dennis

Lilly has taken the initiative to write her own poem and analyse it like we do in class. This is an example of some exceptionally thorough analysis, considering key ideas focusing on WW1. Lilly has then written a beautiful analytical paragraph based around her poem, taking into consideration the key steps: 'HOW, WHAT, and WHY'. Well done Lilly!



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Colour Theory

Riley Templeton

Another fantastic homework by Riley Templeton. This image shows the primary and secondary colours made from chopped fruit. Superb effort and definitely one of your five a day!



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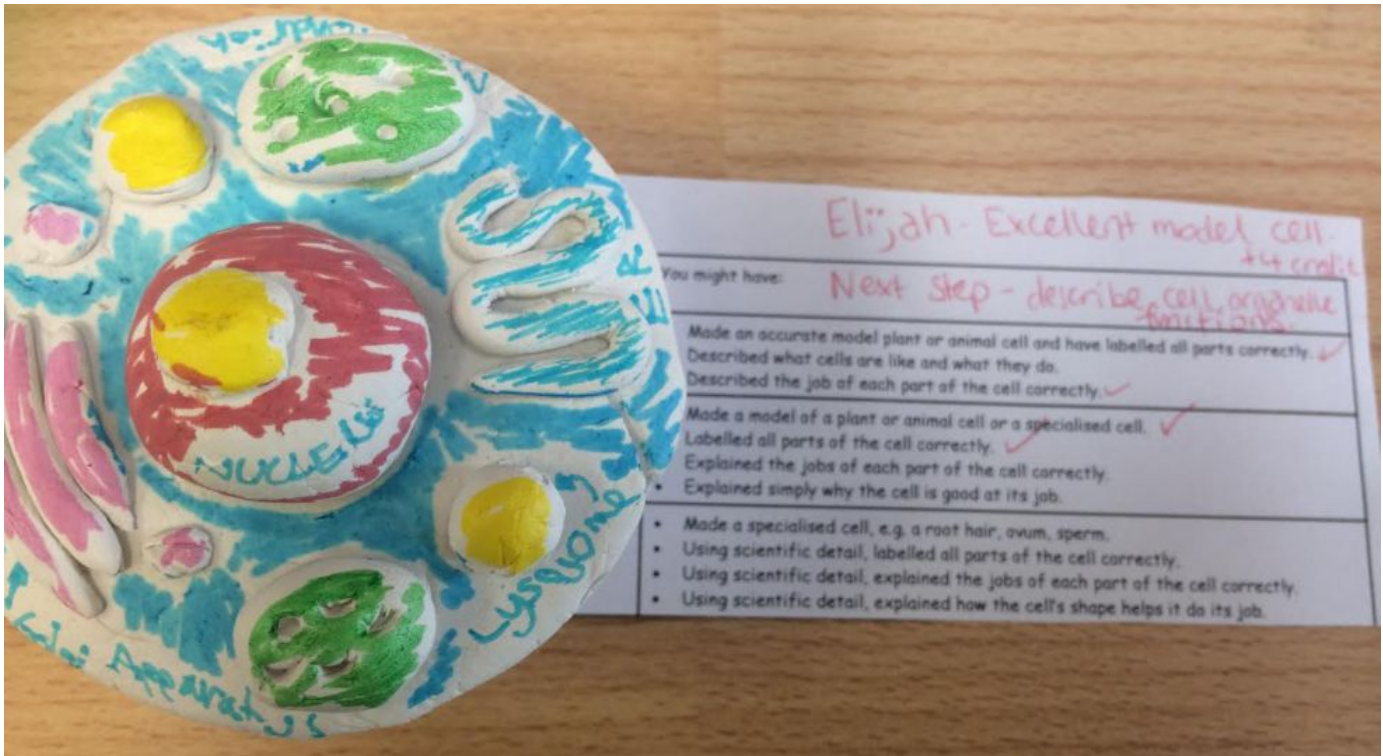
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Cell Models

Elijah Jensen

A homework assignment was set asking pupils to make a model of the cell showing all of the intracellular organelles such as mitochondria, the nucleus and ribosomes. Elijah was able to make a very small, delicate model out of clay and used felt pens to colour the organelles. An amazing piece of work. The model shows extra organelles such as lysosomes and the Golgi body. Well done Elijah!



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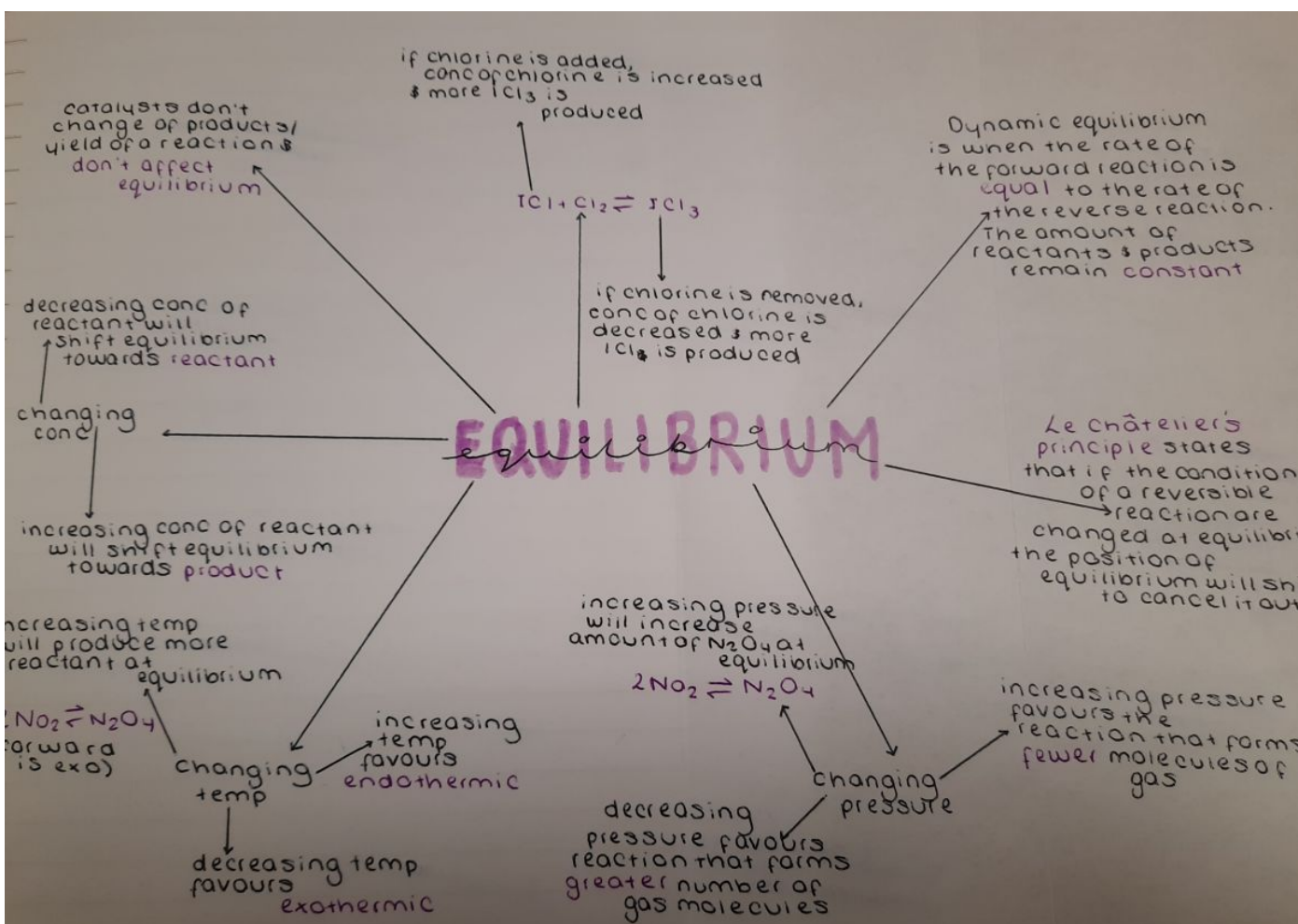
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Reversible Reactions

Ruby Fulcher

Ruby produced this outstanding piece of work following an end of unit test on Rates of Reaction. She has completed a spider diagram which summarises all parts of reversible reactions, paying particular attention to Le Chatelier's Principle. This will be an excellent revision tool in preparation for the GCSE examinations during Summer Term. Well done Ruby.



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Suzanne Sarroff Inspired Edit

Naimah Okafor

This image was set up and taken by Naimah in the style of Suzanne Saroff. Naimah has captured a close-up angle of the objects which create an abstract view of the apple. Naimah has also experimented with Photoshop to develop the image further and create a vibrant contrast. Well done!



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Reversible Reactions

Martha Holt

Martha produced this outstanding piece of work following an end of unit test on Rates of Reaction. Martha has completed a spider diagram which summarises all parts of reversible reactions, paying particular attention to Le Chatelier's Principle. This will be an excellent revision tool in preparation for the GCSE examinations during Summer Term. Well done Martha.



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Colour Splash

Denish Limbu

This fantastic colour splash is by Denish Limbu from Year 9 Photography. Denish has created a bold edit which ensures the viewer focuses solely on the colourful object.



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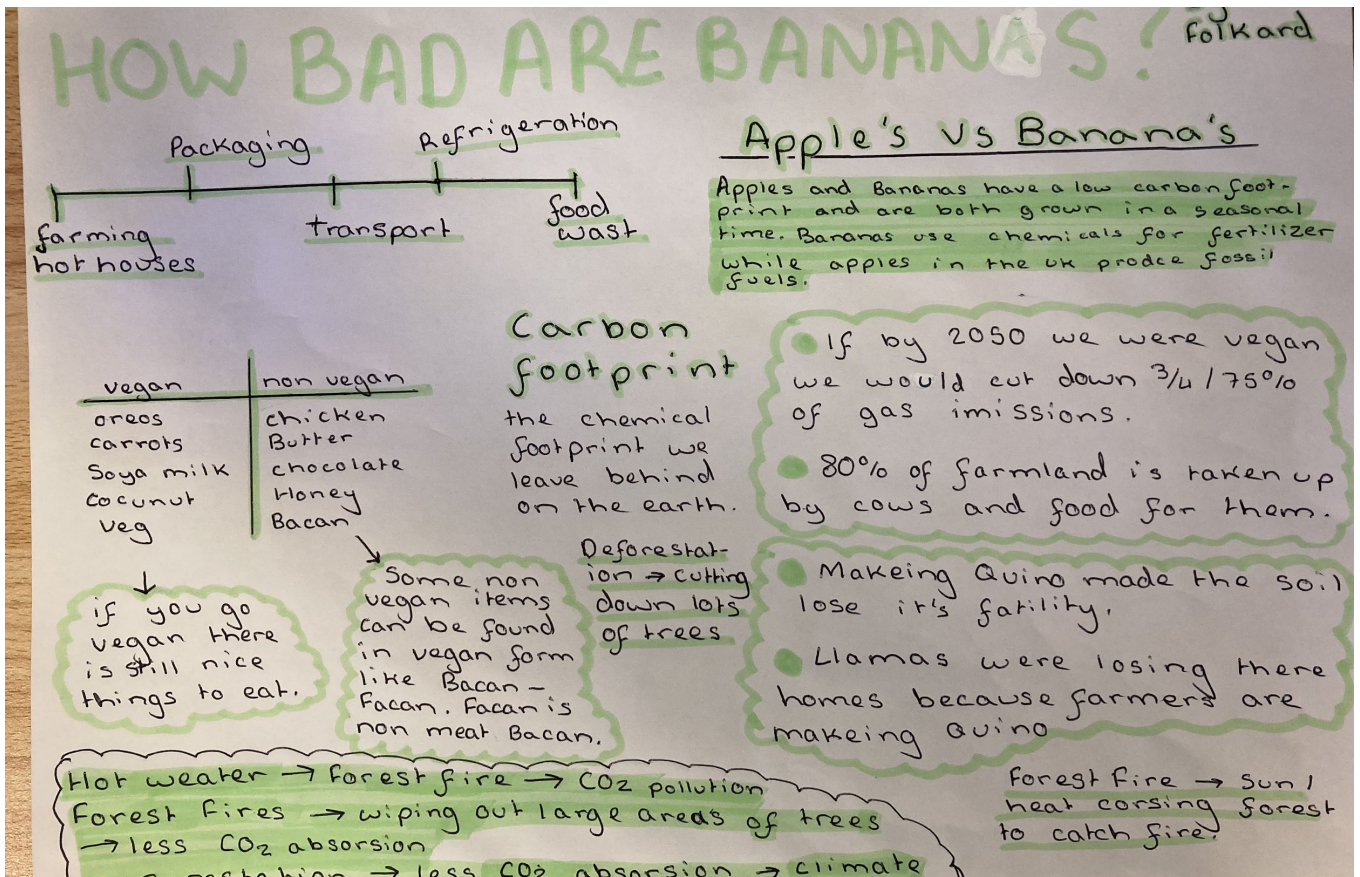
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How Bad are Bananas?

Lola Folkard

Year 8 Geography students have been learning about carbon footprints by reading parts of the book 'How bad are bananas?'. The final task required students to produce a piece of work to summarise what they have learned. Lola has made links between food production, deforestation, carbon emissions and climate change.



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Marsha Tudor Inspired Edit

Amelia Hearn

This image created by Amelie Hearn from Year 10 Photography was inspired by Marsha Tudor. Amelie has created a fantastic kaleidoscope style image with a wide range of focus to complement the unique style of flower and edit.



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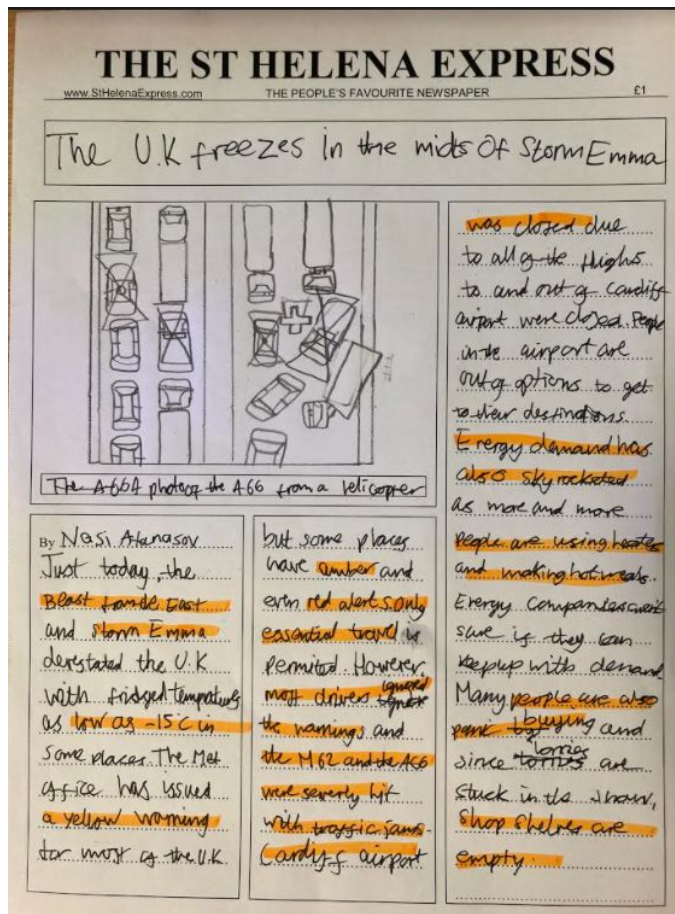
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Beast from the East

Atanas Atanasov

Year 7 Geography students have been learning about UK weather events. Atanas has written a newspaper article explaining the effects of the extreme weather event on people and the economy. Atanas has highlighted the key words and facts. We were impressed with the use of geographical vocabulary.



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