

Science

AP and Honors Chemistry

- Isomers <<https://www.khanacademy.org/science/biology/properties-of-carbon/hydrocarbon-structures-and-functional-groups/v/isomers>>
- Hydrocarbon Structures and Isomers <<https://www.khanacademy.org/science/biology/properties-of-carbon/hydrocarbon-structures-and-functional-groups/a/hydrocarbon-structures-and-isomers>>
- Hydrocarbons and Functional Groups <<https://www.khanacademy.org/science/biology/properties-of-carbon/hydrocarbon-structures-and-functional-groups/e/hydrocarbons-and-functional-groups>>
- Young's Double Slit Experiment <<https://www.khanacademy.org/science/physics/light-waves/interference-of-light-waves/v/youngs-double-split-part-1>>

College Prep Chemistry

- Freezing Point Depression and Boiling Point Elevation <<<https://www.ck12.org/c/chemistry/boiling-point-elevation/enrichment/Boiling-Point-Elevation-and-Freezing-Point-depression-Overview/>>>
- Does Hot Water Freeze Faster than Cold Water? <<<https://www.youtube.com/watch?v=UjldzcxSe3g>>>
- How to make a spectroscope <https://www.google.com/search?client=firefox-b-1-d&q=Make+a+spectroscope+at+home#kpvalbx=_RZHGXtLWL-OlytMPjzGjuA843>
- Measuring the speed of light with marshmallows <<https://demonstrations.wolfram.com/MeasuringTheSpeedOfLightWithMarshmallows/>>

Applied Chemistry

- Making Superheavy elements <<https://www.youtube.com/watch?v=RDvOOVHOAX4>>
- Where will the periodic table end? <<https://www.youtube.com/watch?v=oNWZjacEIU8>>
- Murder Hornets Land in the US <<<https://www.youtube.com/watch?v=q66ba1lggQU>>>
- Hornets from Hell <<https://video.nationalgeographic.com/video/00000144-0a44-d3cb-a96c-7b4d686d0000>>

Integrations of Science

- Takeout Science: Achool! <<<https://youtu.be/laCuY22pqAs>>>
- Celebrating Animal Cells (Part 1) Texas Instruments <<<https://www.youtube.com/watch?v=pixuAZICRDE>>>
- Celebrating Plant Cells (Part 2) Texas Instruments <<<https://www.youtube.com/watch?v=2s3NpOpssDM>>>

- Punnett Pea Predictor Texas Instruments Biology Lesson
<<https://education.ti.com/en/tisciencespire/us/detail?id=AEF54962C4564948AD557EB0E1A8687F&t=645D90021A844896A1DE1820F9E26ACE>>
- Natural Selection Biology Video Lesson
<<https://www.youtube.com/watch?v=psX1BBackOE>>
- Murder Hornets Land in the US << <https://www.youtube.com/watch?v=q66ba1lggQU>>>
- 20 Amazing Honey Bee Facts <<https://matteroftrust.org/20-amazing-honey-bee-facts/>>

Anatomy

Online Dissection/ Review of Systems

Directions for Flinnprep digital dissection on Google Docs

[Flinnprep.com](http://flinnprep.com) - Register and enter the class code 9kpw4 for online dissections

<https://www.whitman.edu/academics/departments-and-programs/biology/virtual-pig> - An alternate online dissection - fetal pig only but presented section by section with clickable links

Biotechnology

Lockard's Principle and Trace Evidence

<https://slideplayer.com/slide/12732562/> - slideshow of Lockard's principle and the 7S's with examples

<https://science.howstuffworks.com/locards-exchange-principle.htm> - Lockard's Principle reading

<http://www.forensicsciencesimplified.org/trace/index.htm> - Go through each link on the right to quickly review trace evidence

<https://www.centredessciencesdemontreal.com/jeux-experiences/autopsie/en/index.html> - A game that teaches and applies many principles and tasks of a forensic scientist

Biology

Photosynthesis & Cellular Respiration

Directions for each new pathway on lab exchange (photosynthesis & respiration) - 2 Google Docs

[Labxchange.org](http://labxchange.org)

https://my.hrw.com/sh2/sh07_10/student/flash/virtual_investigations/hst/act/hst_act_vi.html - A tutorial for both photosynthesis and cellular respiration - Only stage1 relates to this unit. Stage 2 is mitosis if you want to review that as well

http://www.glencoe.com/sites/common_assets/science/virtual_labs/LS12/LS12.html - a virtual lab to test how different wavelengths of light affect plant growth.

<https://www.reading.ac.uk/virtualexperiments/ves/preloader-photosynthesis-full.html> - a virtual lab to test how distance to a light source affects rate of photosynthesis

<http://www.interactive-biology.com/401/the-energy-game/> - A multiple choice game for both processes

<https://games.legendsoflearning.com/games/WyJnYW1lcylsMTEzN10=> - A cellular respiration game

<https://games.legendsoflearning.com/games/WyJnYW1lcylsMTVd> - A photosynthesis game

Digital Dissection 2020 instructions

Go to flinnprep.com

Register using the link on the top right, click student

When prompted for the student linking code enter 9kpw4

From the “My Courses” Tab click on “Flinn Digital Dissection Labs”

For our purposes in the course click on the tab with the #3 - Fetal Pig

(If you want to explore any of the others that is OK, but the fetal pig is most like what we would have done as a review of all systems in class.)

It is interactive. After you have watched the video and read a bit of information, drag and drop the organs into the pig.

Then look at the histology pictures under the virtual microscope.

Follow along with the videos, readings and pictures after that.

Go at your own pace, take your time.

If you like there is an assessment at the end.

HAVE FUN!

LabXchange Photosynthesis Directions

Go to the LabXchange website (labxchange.org)

Log in with Google using your Movalley account

From your dashboard go to classes and open the class Biology9.

If you have not yet joined click add a class and enter the code 433228

Open the “Photosynthesis Pathway”

Read through the text “overview of photosynthesis”

Focus on the terms autotroph and heterotroph. Which one is most related to the process of photosynthesis?

Relate the photo to the equation.

Look at the drawing of the organelle called a chloroplast. Then read what occurs in this organelle. It happens in two parts which are detailed in videos later in the pathway.

The videos will reinforce the processes of photosynthesis. Watch any or all of the videos. The first is an overview of the whole process. The second is about the light reaction. The third is about the dark reaction.

Finally quiz yourself using the multiple choice review questions.

LabXchange Respiration Directions

Go to the LabXchange website (labxchange.org)

Log in with Google using your Movalley account

From your dashboard go to classes and open the class Biology9.

If you have not yet joined click add a class and enter the code 433228

Open the “Cellular Respiration Pathway”

The first document is a drawing with a description that summarizes cellular respiration and its parts.

The second part of the pathway is a video that outlines the entire process of cellular respiration from the sugar our cells use as fuel to ATP that cells can use for energy.

After this video is a text about the process of cellular respiration. Focus on why organisms perform the process, the parts of cellular respiration and what the reactants and products are for each part, and what happens if there is no oxygen present.

Finally there are three videos; one to describe each part of cellular respiration in detail.

AP and Honors Chemistry

- An exclusive look inside a human body farm <<https://www.abc.net.au/lateline/an-exclusive-look-inside-australias-human-body/7944662>>
- Dead Bodies Move while Decomposing <<https://www.abc.net.au/news/2019-09-12/dead-bodies-move-while-decomposing-significant-find-for-police/11492330>>
- Explore Careers in Nuclear Chemistry <https://www.navigatingnuclear.com/explore-careers>
- Careers in Forensic Science <<https://www.thebalancecareers.com/discover-careers-in-forensic-science-974532>>
- Radiography Contest < https://www.rsec.psu.edu/Visitor_Information.aspx>

College Prep Chemistry

- Using Maggots, Flies, and Flesh to Solve a Mystery by Texas Instruments <https://www.youtube.com/watch?v=RiBJQ6M2r18&feature=youtu.be&utm_campaign=21192+Live+Lessons+on+YouTube&utm_medium=email&utm_source=Eloqua&utm_content=21192+YouTube+Live+Lessons_Science+1>
- Evidence Response Team FBI: Inside the crime lab <<https://wpsu.pbslearningmedia.org/resource/evidence-response-team/fbi-crime-lab/>>

- Chemistry FBI: Inside the crime lab <<
<https://wpsu.pbslearningmedia.org/resource/chemistry/fbi-crime-lab/>>>
- Trace Evidence FBI: Inside the Crime Lab <<
<https://wpsu.pbslearningmedia.org/resource/trace-evidence/fbi-crime-lab/>>>
- Career Path of a Forensic Chemist <<
<https://www.acs.org/content/acs/en/education/resources/highschool/chemmatters/past-issues/2019-2020/october-2019/profile-with-chemist.html>>>
- Simple Explanation of a Mass Spectrometer
<<https://www.youtube.com/watch?v=tOGM2gOHKPC>>

Applied Chemistry

- Does Hot Water Freeze Faster than Cold Water? <<
<https://www.youtube.com/watch?v=UjldzcxSe3g>>>
- Shrodiner's Cat and The Law of Superposition <
<https://www.youtube.com/watch?v=UjaAxUO6-Uw>
- Who Dunit and the Law of Superposition
<<https://www.carlisle.k12.ky.us/userfiles/924/Classes/577/law%20of%20superposition%20worksheet.pdf>
- If matter falls down, does antimatter fall up?
<https://www.youtube.com/watch?v=46NanUtElhk>
- Are there Questions Nobody Knows the Answers to?
<<<https://www.youtube.com/watch?v=7SWvDHvWXok>>>

Integrations of Science

- Why are insects important?
<https://www.youtube.com/watch?v=KgZ_YdKPMdM&list=PLydZ2Hrp_gPR5ql3XoS8xwnTss5QBM81p>
- How Worms Supercharge Compost for Healthier Plants and Greater Yields
<https://www.youtube.com/watch?v=oTTGcsAXwUI&list=PLydZ2Hrp_gPR5ql3XoS8xwnTs5QBM81p&index=6>
- What happens if all the bees died?
<https://www.youtube.com/watch?v=JilYBvRfiLA&list=PLydZ2Hrp_gPR5ql3XoS8xwnTss5QBM81p&index=3>
- What happens to a body after it dies?
<<https://www.youtube.com/watch?v=PYUjMhuwBNo>>
- Using Zombies to Understand the Spread of Disease by Texas Instruments
<https://www.youtube.com/watch?v=SkPUyBT2KzY&feature=youtu.be&utm_campaign=21192%20Live%20Lessons%20on%20YouTube&utm_medium=email&utm_source=Eloqua&utm_content=21192%20YouTube%20Live%20Lessons%20Science%201>

Anatomy Digestive System

<https://www.slideshare.net/Dipaliharkhani21/anatomy-and-physiology-of-the-digestive-system-90499453> - Digestive system slideshow

<https://my.clevelandclinic.org/health/articles/7041-the-structure-and-function-of-the-digestive-system> - Structure and Function reading

<https://www.everydayhealth.com/digestive-health/common-digestive-conditions-from-top-bottom/> - Disorder reading

<https://www.visiblebody.com/learn/digestive> - An interactive

<http://www.niagaracc.suny.edu/val/digest.html> -Histology Slides

<https://www.purposegames.com/game/digestive-system-labeling-interactive-game> - Labelling Interactive

<http://www.klbict.co.uk/interactive/science/digestion2.htm> - Self Quiz

Biotechnology

Observational Skills and Steps at a crime scene

<https://www.slideshare.net/watsonma12/chapter-1-observation-skills-52404498> - Slideshow on observational skills in forensic science

<http://www.shodor.org/succeed-1.0/forensic/observation/observation.html> - Observation activity

https://www.soinc.org/sites/default/files/uploaded_files/crimebusters/Observation_Skills.pdf - Another set of observational skill/logic activities (some with answers)

<http://www.forensicsciencesimplified.org/csi/how.html> - overview of steps that a CSI takes

<https://science.howstuffworks.com/csi4.htm> - Reading on Crime Scene Evidence Collection

https://afhsandersonscience.weebly.com/uploads/2/0/2/8/20282395/the_seven_ss_of_crime-scene_investigation.pdf - Seven S's slideshow with descriptions

<http://forensics.rice.edu/index.html> - Game - Focus on Case 1 for the practice most relevant to this review

Biology

Cells, organelles and movement through a membrane

www.labxchange.org - Lab Xchange "Pathways"

LabXchange directions and intro letter (3 google docs)

https://www.cellsalive.com/cells/cell_model_js.htm - Interactive Cell Model

<https://www.legendsoflearning.com/learning-objectives/parts-of-the-cell/> - A variety of games for organelles

<https://www.youtube.com/watch?v=2C6riGxRh2I> - A blast from the past

<https://biomanbio.com/HTML5GamesandLabs/Cellgames/celldefensehtml5page.html> - Cell transport game

Parents and Students,

In collaboration with Mr. Simone, I am excited to provide a new online resource with excellent content to review topics we learned this year in Biology. This new resource is called LabXChange, and it allows me to select various resources from a vast library. These resources include video, text, virtual labs, and virtual simulations.

I have constructed my first "Pathway" on cells and organelles, and a second on the related topic of movement through a cell membrane. In order to access this resource, you will need to create an account on the LabXChange website. You can do this simply by signing in with your Mo Valley Google account. Once you create your account, join the classroom by entering the code I provide below. Once your account is created and you have joined the classroom, click on the "Pathway" titled "Cells & Organelles".

To make your account go to: <https://www.labxchange.org/>

To join the classroom enter this code: 433228

I hope you enjoy this online resource, and keep an eye out for additional ones that will review other topics we learned about this year. Many thanks to Mr. Simone for first creating a pathway about proteins and helping me out with the questions I had about this new resource.

As always, if you have any questions please do not hesitate to contact me.

Monica Krejnus

In addition, I have created a Google Doc to go along with the "Pathway". This includes directions on how to best utilize the resource, main ideas.

Go to the LabXchange website (labxchange.org)
Log in with Google using your Movalley account
From your dashboard go to classes, click add a class and enter the code 433228

Open the “Cells and Organelles Pathway”

Review the text “Introduction to Cell Structure and Function” it is very short and straightforward.

Review the text “Comparing Prokaryotic and Eukaryotic Cells”
Focus on: the definition and examples of each type of cell and the differences between prokaryotes and eukaryotes.

The text “Eukaryotic Origins” is an optional reading to extend your knowledge of eukaryotic cells or go to the end of the pathway and watch the video “Endosymbiosis Theory”.

Choose one of the two readings (either “Unique Characteristics of Eukaryotic Cells” or “Eukaryotic Cells” to learn more about the structure of eukaryotic cells and their organelles.

Finish by watching the 3 minute video “Inner Life of the Cell with Music”.

Go to the LabXchange website (labxchange.org)
Log in with Google using your Movalley account
From your dashboard go to classes and open the class Biology9.
If you have not yet joined click add a class and enter the code 433228

Open the “Movement Through a Membrane Pathway”

Choose one of the first two readings either “The Cell Membrane” or “The Components and Structure of the Plasma Membrane”. To learn about the structures and functions of all the parts of a cell membrane. Focus on the phospholipids and proteins.

The text “Fatty Acids Consist of Carboxyl Groups with a Carbon Tail” is optional but explains more about the phospholipids in the cell membrane.

Read the text “Passive Transport”. Focus on; why and how passive transport (diffusion) occurs and how tonicity (the amount of other substances that are dissolved in the water) affects diffusion.

Open the simulation “Diffusion Across a Permeable Membrane”. Experiment with different concentrations of each gas on the 2 sides. Notice you can use the cursor to draw a square around certain molecules to mark the red so that you can follow them. Hit reset and play as much as necessary. What always seems to happen in this simulation?

Read the short text “Membrane Bilayers are Permeable to Small Uncharged Molecules”. It explains what substances can and cannot move through simple diffusion and why.

Watch the video about facilitated diffusion

Look at the text “Bulk Transport In and Out of the Cell”. Focus on the difference between endocytosis and exocytosis and the similarity of how they occur.

Choose one of the two readings “Active Transport” (the second has more detail). This describes how substances that can’t use passive transport move. Focus on what it means to move “against the gradient”.

The video about the sodium potassium pump is optional, but will reinforce a lot of the active transport reading.

Finally the reading “Osmoregulation and Osmotic Balance” will reinforce and expand on the concept of how tonicity affects diffusion.

AP and Honors Chemistry

- Weak Acid and Base Equilibria
<https://www.youtube.com/watch?v=drLhjGKvULE&list=PLoGgviqq4845Sy3UfnNh_PljzAptMR7MQ&index=3>
- AP Exam Review 1
<https://www.youtube.com/watch?v=rGgcBCGeLiA&list=PLoGgviqq4845Sy3UfnNh_PljzAptMR7MQ&index=24&disable_polymer=true>
- AP Exam Review 2
<https://www.youtube.com/watch?v=xFiFyf5AACw&list=PLoGgviqq4845Sy3UfnNh_PljzAptMR7MQ&index=26>
- AP Exam Review 3
<https://www.youtube.com/watch?v=ZXc-PAzsN3M&list=PLoGgviqq4845Sy3UfnNh_PljzAptMR7MQ&index=27>
- AP Exam Review 4
<<https://www.youtube.com/watch?v=U3UK2RVfd1g&list=PLoGgviqq4845Sy3UfnNh_PljzAptMR7MQ&index=28>

College Prep Chemistry

- Flavor Chemistry: The science behind taste and smell <<
<https://www.youtube.com/watch?v=EJud8MKrvBE>>>
- How do we smell? << <https://www.youtube.com/watch?v=snJnO6OpjCs>>>
- Meet Ellen: Food Chemist << <https://www.youtube.com/watch?v=YZ-VD9YYsSc>>>
- Sweet Life of a Candy Chemist<<
<https://www.acs.org/content/acs/en/education/resources/highschool/chemmatters/past-issues/2019-2020/feb-2020/chemistry-in-person.html>>>
- Dream Job Food Chemist << <https://newsela.com/read/lib-uma-parasar-food-chemist/id/2001006235>>>
- The Real Reason you Cannot Find Yeast Right Now
<<https://www.youtube.com/watch?v=XeVDmJhNbsM>>
- Buying Bread During a Pandemic << <https://newsela.com/read/french-bakeries-coronavirus/id/2001008048>>>

Applied Chemistry

- What is a Calorie <<https://www.youtube.com/watch?v=VEQaH4LruUo>>
- The big reveal: What's behind nutrition labels? <<
<https://www.acs.org/content/acs/en/education/resources/highschool/chemmatters/past-issues/archive-2012-2013/what-is-behind-nutrition-labels.html>>>
- The science behind calories and nutrition fact labels <
<https://www.youtube.com/watch?v=G0O87gWv-Xk>>
- Nutrition Labels 101: What is a serving size and how do I calculate calories:
<<https://www.youtube.com/watch?v=xs5tg9k21nw>>

- The difference between recommended daily allowance and daily values
<<https://www.youtube.com/watch?v=26RStMJjoLA>>

Integrations of Science

- Get to Know a Housefly <<https://www.rtnn.ncsu.edu/2020/03/26/sci-takeout-fly/>>
- All About Flies <<https://www.welcomewildlife.com/all-about-flies/>>
- Flight of the Fly <<https://www.youtube.com/watch?v=tkK63pHFML0>>
- What is insect morphology? <<https://www.youtube.com/watch?v=2O9cKg4lxks>>
- How do flies walk on ceilings? <https://www.youtube.com/watch?v=YGDA0AwQnpA>
- Basic Microscope Use and Setup <<https://www.youtube.com/watch?v=SUo2fHZaZCU>>
- The World's Highest Resolution Electron Microscope
<<https://www.youtube.com/watch?v=eSKTFXv5rdI>>

Anatomy

Muscular System

<https://www.visiblebody.com/learn/muscular> - A good general resource, each section clickable to expand and learn more.

<https://www.britannica.com/science/human-muscle-system/The-abdomen> - Muscle group information with labelled diagrams

<https://www.healthline.com/human-body-maps/muscular-system#1> - Interactive model

http://highered.mheducation.com/sites/0072437316/student_view0/chapter42/animations.html#
- Sarcomere Animation

<https://www.dmu.edu/medterms/musculoskeletal-system/musculoskeletal-system-diseases/> - A reading on muscle diseases and disorders

http://www.mhhe.com/biosci/genbio/virtual_labs_2K8/labs/BL_13/index.html - A virtual lab to learn about threshold stimulus levels and muscle stimulation.

<http://anatomycorner.com/main/virtual-cat-dissection/cat-virtual-dissection-muscles/> - A virtual cat dissection with pictures

<http://niagaracc.suny.edu/val/muscle.html> - A virtual lab with the 3 muscle types and diagrams of human muscles

https://www.biologycorner.com/quiz/qz_muscles.html - A short self quiz

<https://www.purposegames.com/game/431> - Muscle labelling game

<https://www.realbodywork.com/articles/game-muscles-1/> - Muscle matching game

<https://www.getbodysmart.com/muscular-system-quizzes> - A variety of labelling quizzes

Biotechnology

Energy Sources and Biofuels

<https://www.energy.gov/science-innovation/energy-sources> - Information on all energy types

<https://www.kqed.org/quest/64341/nonrenewable-and-renewable-energy-resources-2> - Renewable/nonrenewable infographic

<https://www.kqed.org/quest/72759/energy-and-electricity-from-source-to-use> - Infographic of different sources to uses

<https://www.kqed.org/quest/72749/how-is-waste-converted-into-energy> - An explainer of how waste can be turned to energy

<https://www.pbslearningmedia.org/resource/kqedcl11.sci.ess.turningwasteintoenergy/turning-waste-into-energy/> - Waste to energy video

<https://www.energy.gov/eere/bioenergy/biofuels-basics> - Biofuel reading

<http://fieldsoffuel.org/> - A farming game with a focus on fuel and the environment

Biology

Enzymes

http://www.chem4kids.com/files/bio_enzymes.html - Reading and embedded video on enzymes and their function.

<https://www.medicalnewstoday.com/articles/319704> - Reading - split into small sections with good graphics

<https://www.youtube.com/watch?v=gqVFkRn8f10> - Video

<https://www.healthline.com/health/why-are-enzymes-important> - Reading, why enzymes are important

<https://en.wikiversity.org/wiki/Biochemistry/Enzymes> - Short reading, good graphic for examples

<https://1910.stem.org.uk/offharness/frameset.htm> - Interactive tutorial - many sections, almost everything is clickable to get information

<https://www.biologycorner.com/worksheets/enzyme-lab-virtual.html> - Directions and questions to go with the virtual lab

https://www.mhhe.com/biosci/genbio/virtual_labs_2K8/labs/BL_02/index.html - Virtual lab with the ability to show how pH effects activity

<https://www.scientificamerican.com/article/exploring-enzymes/> - A lab you can do at home using yeast and peroxide (with parent permission)

videos, enzyme labs you can do at home (with parent permission)

<https://hudsonalpha.org/enzyme-science-experiment-at-home/>

<https://www.youtube.com/watch?v=7t7v8w7EqTM>

AP and Honors Chemistry

- Equilibrium, Reversible Reactions, and the Equilibrium Constant <<https://m.youtube.com/watch?v=iPWe-jHRLMw&list=PLoGgviqq4845Sy3UfnNh_PljzAptMR7MQ&index=21&t=0s>>
- Calculating Equilibrium Concentrations and Le Châtelier's Principle <<https://m.youtube.com/watch?v=IleDMFWf7nI&list=PLoGgviqq4845Sy3UfnNh_PljzAptMR7MQ&index=21>>
- Solubility Equilibria, Common Ion Effect, and pH <<https://m.youtube.com/watch?v=kZ62-p5bqyQ&list=PLoGgviqq4845Sy3UfnNh_PljzAptMR7MQ&index=22>>
- Introduction to Acids and Bases <<https://m.youtube.com/watch?v=2K3ns-SSbuU&list=PLoGgviqq4845Sy3UfnNh_PljzAptMR7MQ&index=1>>
- PH and pOH of Strong Acids and Bases <<https://m.youtube.com/watch?v=0qK-83hIC4s&list=PLoGgviqq4845Sy3UfnNh_PljzAptMR7MQ&index=2>>

College Prep Chemistry

- We are made of "Star Stuff" <<https://www.youtube.com/watch?v=2bm479V8qPs>>
- Gold Periodic Table Elements <<https://www.youtube.com/watch?v=3OoLHe-4aNA>>
- Is 24K Pure Gold? <<https://www.scientificamerican.com/article/is-24k-gold-pure/>>
- Removing Heavy Metals from Water <<https://www.youtube.com/watch?v=1UWS7E8MgKc>>
- Ruby Red Colloidal Gold <<https://www.youtube.com/watch?v=VuLJIT5UDal>>

Applied Chemistry

- The History of Chocolate <<https://www.ted.com/talks/deanna_pucciarelli_the_history_of_chocolate/transcript?language=en>>
- The Chemistry of Chocolate <<<https://www.nbclearn.com/chemistry-now/chemistry-of-chocolate/cuecard/52212>>>
- Chocolate Industry Dives Rainforest Disaster in <<<https://newsela.com/read/cocoa-chocolate-deforestation/id/35112/>>>
- Tryptophan <https://www.britannica.com/video/186988/chemistry-tryptophan-myth-drowsiness-turkey>

Integrations of Science

- Cell Transport with the Amoeba Sisters <<<https://m.youtube.com/watch?v=Ptmlvtei8hw>>>

- Immune System with the Amoeba Sisters
<<<https://m.youtube.com/watch?v=fSEFXl2XQpc>>>
- Homeostasis with the Amoeba Sisters
<<<https://m.youtube.com/watch?v=Iz0Q9nTZCw4>>>
- Why do we sweat? Ted Ed <<https://m.youtube.com/watch?v=fctH_1NugCQ>>
- Plant Structure and Adaptation <<<https://m.youtube.com/watch?v=DGpPHrLF-5M>>>

Anatomy

Skeletal System Review

<https://courses.lumenlearning.com/suny-ap1/chapter/the-functions-of-the-skeletal-system/> - Reading on Skeletal System Functions

<https://www.britannica.com/science/human-skeleton> - Detailed reading structures and development

<https://www.innerbody.com/image/skelfov.html> - Interactive labelled diagrams

<https://www.uc.edu/content/dam/uc/ce/images/OLLI/Page%20Content/THE%20SKELETAL%20SYSTEM.pdf> - Detailed reading with diagram

<https://askabiologist.asu.edu/bone-lab> - Virtual lab

<https://anat215.sitehost.iu.edu/virtuallab/> - virtual lab of the knee

<https://www.purposegames.com/game/label-the-skeleton-game> - bone labelling quiz

<https://quizlet.com/3439190/anatomy-chapter-5-bones-skeletal-system-quiz-1-flash-cards/> - Skeletal System Quizlet Quiz

<https://www.youtube.com/watch?v=AkmHo7t3fy4> - Just for fun

Biotechnology

DNA and Selective Breeding

<https://learn.genetics.utah.edu/content/basics/> - Lots of basic genetics tutorials, videos and interactives to review DNA and inheritance

<https://biomanbio.com/HTML5GamesandLabs/LifeChemgames/protsynthracehtml5page.html> - A game to demonstrate how DNA is turned to a protein, which determines traits in all species

<https://www.yourgenome.org/facts/what-is-selective-breeding> - Reading about selective breeding

<https://www.genome.gov/about-genomics> - About genomics

<https://games.legendsoflearning.com/games/WyJnYW1lcyIsODc4XQ==> - selective breeding game

Biology

Carbon bonding and Macromolecules

<https://www.khanacademy.org/science/biology/properties-of-carbon/carbon/v/carbon-as-a-building-block-of-life> - Video - Carbon bonding and its importance to life

<https://www.ck12.org/c/physical-science/carbon-bonding/lesson/Carbon-Bonding-MS-PS/> - Carbon bonding reading

<https://www.khanacademy.org/science/biology/macromolecules> - Khan academy macromolecules lesson (in pieces with built in self quizzes and a unit test to test your knowledge)

<https://courses.lumenlearning.com/wm-biology1/chapter/reading-biological-macromolecules/> - video and a table comparing macromolecules

I am attaching my Google Doc for the virtual lab directions

<http://www.occc.edu/biologylabs/Documents/Organic%20Compounds/Organic%20Compounds.htm> - Macromolecule Virtual Lab

<https://reviewgamezone.com/game.php?id=675> - you choose the style of game to play using some review questions

Directions and guide for the macromolecule virtual lab

Go to

<http://www.occc.edu/biologylabs/Documents/Organic%20Compounds/Organic%20Compounds.htm>

First click on the carbohydrates block and see how to test for carbohydrates. There are 2 tests, one for simple and one for complex carbs.

You will see some general information about carbohydrates.

Click on the area to virtually add water to a test tube.

Then click on the area to virtually add the Benedict's Reagent. Note:

what color indicates a result that is negative for sugar presence _____

what color indicates a result that is positive for sugar presence _____

You will use all this info later.

Click the picture to heat the tube and see the color change. (negative)

Then click to add the glucose and record that color change. (positive)

Click continue to see the comparison.

Click continue to add iodine to water. (we did this in class with the beaker and the baggie)

Record this color, it is the color that would be a result that is negative for starches. _____

Then click on the picture of starch to add it to the test tube with iodine. Record the color, it is the color that would be a result that is positive for starches. _____

Note the comparison and click continue.

Then click on the proteins block to see how to test for proteins.
 You will see some general information about proteins.
 Click on the area to virtually add water to a test tube.
 Then click on the area to virtually add the Biuret reagent. Note:
 what color indicates a result that is negative for protein presence _____
 Click to add the protein
 what color indicates a result that is positive for protein presence _____
 Note the comparison and click continue.
 You will use all this info later.

Then click on the proteins block to see how to test for fats.
 You will see some general information about lipids (fats).
 Click on the area to virtually add water to a test tube.
 Then click on the area to virtually add the Sudan IV. Note:
 what color indicates a result that is negative for protein presence _____
 Click to add the oil.
 what color indicates a result that is positive for protein presence _____
 Click continue to finish the background knowledge part.
 Now click on the foods block.

Click on each food and look at the test results for sugar, starch, protein and fat.
 Record the results in the table and compare to the above information to determine if each food has measurable amounts of each macromolecule.

	Simple Sugar	Starch	Protein	Fat
Potatoes	Color _____ Present or Absent	Color _____ Present or Absent	Color _____ Present or Absent	Color _____ Present or Absent
Juice	Color _____ Present or Absent	Color _____ Present or Absent	Color _____ Present or Absent	Color _____ Present or Absent
Almonds	Color _____ Present or Absent	Color _____ Present or Absent	Color _____ Present or Absent	Color _____ Present or Absent
Eggs	Color _____ Present or Absent	Color _____ Present or Absent	Color _____ Present or Absent	Color _____ Present or Absent
Salmon	Color _____ Present or Absent	Color _____ Present or Absent	Color _____ Present or Absent	Color _____ Present or Absent
Milk	Color _____ Present or Absent	Color _____ Present or Absent	Color _____ Present or Absent	Color _____ Present or Absent

AP and Honors Chemistry

- Enthalpy of Reaction/Formation and Hess's Law
- <https://www.youtube.com/watch?v=U513EPhHV1o&list=PLoGgviqq4845Sy3UfnNh_PljzAptMR7MQ&index=14>

- Reaction Rates, Rate Laws, and Concentration Changes
<https://www.youtube.com/watch?v=heJ-giZRO_Q&list=PLoGgviqq4845Sy3UfnNh_PljzAptMR7MQ&index=18>
- Reaction Mechanisms, Rate Law, and Steady State Approximation
<https://www.youtube.com/watch?v=M9cCe_Av7XA&list=PLoGgviqq4845Sy3UfnNh_PljzAptMR7MQ&index=19>
- Collision Model, Reaction Energy Profiles, and Catalysis
<https://www.youtube.com/watch?v=Az6FxDh1HU&list=PLoGgviqq4845Sy3UfnNh_PljzAptMR7MQ&index=20>
- Energy Diagrams, Thermal Equilibrium, and Heat Capacity
<https://www.youtube.com/watch?v=TsgaiTg1aVc&list=PLoGgviqq4845Sy3UfnNh_PljzAptMR7MQ&index=21>
- Reaction Kinetics <<https://www.brightstorm.com/science/chemistry/chemical-reaction-rates/>>

College Prep Chemistry

- The Chemistry of Eggs and Egg shells <<
<https://www.compoundchem.com/2016/03/26/eggs/>>>
- Chemistry of egg dyeing. ACS.
<<<http://www.redwineandapplesauce.com/2013/03/29/a-video-on-the-chemistry-of-egg-dyeing/>>>
- Cook an Egg with No Heat
<<<https://www.acs.org/content/acs/en/pressroom/reactions/videos/2017/cook-an-egg-with-no-heat-egg-cellent-weird-science-experiments.html>>>
- Denaturing Enzymes <<https://www.youtube.com/watch?v=1Us651M0DEg>>
- Practice Lewis Dot Structures
<<https://www.sciencegeek.net/Chemistry/Review/LewisStructures/>>

Applied Chemistry

- The law of conservation of mass. Ted Ed. <<
<https://www.youtube.com/watch?v=2S6e11NBwiw>>>
- What triggers a chemical reaction? Ted Ed <<
<https://www.youtube.com/watch?v=8m6RtOpqvtU>>>
- The chemistry of cookies << <https://www.youtube.com/watch?v=n6wpNhyreDE&t=2s>>>
- How Does Radiocarbon Dating Work?
<<https://www.youtube.com/watch?v=phZeE7Att_s>>

Integrations of Science

- Superbugs that Resist Antibiotics Can Evolve in 11 days
<<https://www.biointeractive.org/classroom-resources/superbugs-resist-antibiotics-can-evolve-11-days>>
- Microbes 101: Bacteria <<https://medium.com/hhmi-science-media/microbes-101-bacteria-and-protists-4ac700f9b944>>
- Structure of Bacteria <<https://www.youtube.com/watch?v=lzHdQQn6o7E>>
- The deadliest being on planet Earth: The Bacteriophage
<<https://www.youtube.com/watch?v=YI3tSmFsrOg>>
- How do antibiotics work? <<https://www.youtube.com/watch?v=X1GT2bKgcI8>>

Anatomy

Integumentary System

<https://www.kenhub.com/en/library/anatomy/integumentary-system> - information with videos memory devices lots of great diagrams and some quizzes.

<https://www.slideshare.net/itutor/the-integumentary-system-21210498> - slideshow

<https://opentextbc.ca/anatomyandphysiology/chapter/5-4-diseases-disorders-and-injuries-of-the-integumentary-system/> - information on skin diseases and disorders

<https://anat215.sitehost.iu.edu/virtuallab/> - Indiana University virtual lab - click on integumentary system/skin

<https://learningnurse.org/games/tr-integumentary/game.html#> - a game designed for those in nursing programs - it's tough, but pretty neat.

<https://www.purposegames.com/game/integumentary-system-skin-structure> - skin structures labelling game

Biotechnology

Agricultural Biotechnology

<https://www.usda.gov/topics/biotechnology/biotechnology-frequently-asked-questions-faqs> - USDA's Ag. Biotech FAQ's

<https://www.fda.gov/food/consumers/agricultural-biotechnology> - FDA info on GMO foods

http://absp2.cornell.edu/resources/briefs/documents/warp_briefs_eng_scr.pdf - short reading on Ag. Biotech

<https://www.mixerdirect.com/blogs/mixer-direct-blog/10-products-of-agricultural-biotechnology> - 10 examples of how we use biotechnology

<https://www.youtube.com/watch?v=lq3jx3X5TJM&feature=youtu.be> - video clip on bacterial transformation

<https://learn.genetics.utah.edu/content/labs/pcr/> - PCR tutorial and virtual lab - how we obtain copies of desirable DNA

<https://www.yourgenome.org/facts/what-is-crispr-cas9> - Info for the crispr method of making a GMO (Don't forget you can rewatch the videos that were already on google classroom)

<https://cropwatch.unl.edu/biotechnology/makinggmo> - Info with game

https://glencoe.mheducation.com/sites/dl/free/0078802849/383937/BL_22.html - Gene splicing activity (virtual lab)

Biology

<https://www.ck12.org/biology/structure-and-properties-of-water/lesson/Biochemical-Properties-of-Water-Advanced-BIO-ADV/> - reading with self-check questions

http://www.glencoe.com/sites/common_assets/science/virtual_labs/CT10/CT10.html - virtual lab

<https://sciencemusicvideos.com/the-properties-of-water/> - a lab you could try at home with parent permission

https://www.biologyjunction.com/properties_of_water.htm - reading with a lab you can do at home with parent permission

AP and Honors Chemistry

- Ideal Gas Law and Kinetic, Molecular Theory
<https://www.youtube.com/watch?v=Hx75f7JIYs&list=PLoGgviqq4845Sy3UfnNh_PljzAptMR7MQ&index=9>
- Solutions, Mixtures, and Solubility
<https://www.youtube.com/watch?v=JKJ2n64EvRc&list=PLoGgviqq4845Sy3UfnNh_PljzAptMR7MQ&index=10>
- Spectroscopy, Photoelectric Effect, and Beer-Lambert Law
<https://www.youtube.com/watch?v=34dzQtkpDhM&list=PLoGgviqq4845Sy3UfnNh_PljzAptMR7MQ&index=11>
- Reactions, Net-Ionic Equations, Chemical Changes
<https://www.youtube.com/watch?v=eohvdlHGnTE&list=PLoGgviqq4845Sy3UfnNh_PljzAptMR7MQ&index=12>
- Stoichiometry, Titration, Acid-Base Reactions, and Redox Reactions
<https://www.youtube.com/watch?v=4sT27HrOiFY&list=PLoGgviqq4845Sy3UfnNh_PljzAptMR7MQ&index=15>

College Prep Chemistry

- Alternative Fuels << <https://www.pbs.org/video/healthy-air-healthy-communities-episode-nine-alternative-fuels/>>>
- Catalytic Converter Demonstration <<<https://www.aiche.org/academy/videos/catalytic-converter-demonstration>>>
- Reaction Rates <<<https://www.pbs.org/video/chemistry-physics-chemistry-1201-reaction-rates/>>>
- Endangered and Critical Elements
<<https://www.acs.org/content/acs/en/greenchemistry/research-innovation/endangered-elements.html>>

Applied Chemistry

- Endangered and Critical Elements
<<https://www.acs.org/content/acs/en/greenchemistry/research-innovation/endangered-elements.html>>
- Why is Helium Considered Endangered?
<<https://www.acs.org/content/acs/en/greenchemistry/research-innovation/endangered-elements/helium.html>>
- Why is Indium Considered Endangered?
<<https://www.acs.org/content/acs/en/greenchemistry/research-innovation/endangered-elements/indium.html>>
- Why is Phosphorous Considered Endangered?
<<https://www.acs.org/content/acs/en/greenchemistry/research-innovation/endangered-elements/phosphorus.html>>
- Why is Neodymium Considered Endangered?
<<https://www.acs.org/content/acs/en/greenchemistry/research-innovation/endangered-elements/neodymium.html>>

Integrations of Science

- How giant tubeworms survive at hydrothermal vents <<https://www.pbs.org/video/how-giant-tube-worms-survive-at-hydrothermal-vents-cpms1j/>>
- Reading activity and Interactive Food web
<<https://oceanexplorer.noaa.gov/edu/learning/5_chemosynthesis/activities/hydrothermal.html#activity>>
- Behind the Science: Chemosynthesis <<<https://www.youtube.com/watch?v=BLOUFrcnG7E>>>
- Photosynthesis <<<https://media.hhmi.org/biointeractive/click/photosynthesis/>>>
- Chemosynthesis v Photosynthesis <https://www.youtube.com/watch?v=ER2KsU2I4_Y>

Anatomy, Biotechnology, and Biology

Information on the coronavirus from the biology/RNA perspective.

<https://www.sciencenewsforstudents.org/article/explainer-what-is-a-coronavirus> - background reading, because there have been similar viruses to this.

<https://www.nytimes.com/interactive/2020/04/03/science/coronavirus-genome-bad-news-wrapped-in-protein.html> - the genetic components and functions of this specific virus

<https://www.nationalgeographic.com/science/2020/02/here-is-what-coronavirus-does-to-the-body/#close> - what coronavirus does to your body

https://www.cdc.gov/coronavirus/2019-ncov/cases-updates/summary.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fsummary.html - CDC situation summary

<https://www.arcgis.com/apps/opstdashboard/index.html#/bda7594740fd40299423467b48e9ecf6>
- Interactive map by Johns Hopkins University

https://sciencecases.lib.buffalo.edu/files/covid19_treatment.pdf
Pandemic Pandemonium: Why Can't We Just Treat COVID-19? by Melissa S. Kosinski-Collins, Lindsay Mehrmanesh, Jessie Cuomo, and Kene N. Piasta Department of Biology Brandeis University, Waltham, MA - case study in parts, each with questions to think about.
<https://www.brandeis.edu/now/2020/april/study-guide-coronavirus.html> - link to the information about the developers of the case study with answers to the questions.

<https://biomanbio.com/HTML5GamesandLabs/LifeChemgames/protsynthracehtml5page.html> - A protein synthesis game (Because all that was some heavy stuff, you deserve to apply the info you know in a game.)

Earth Day Materials

<https://www.earthday.org/earth-day-2020/> - earthday network website with 22 virtual challenges

<https://perspectives.se.com/performance-contracting/2020-earth-day-at-home-toolkit> - schneider electric at home activities

<https://www.nasa.gov/feature/goddard/2020/earthdayathome-with-nasa/> - Earth day at home with NASA

<https://www.epa.gov/earthday> - The EPA's Earth day site

AP and Honors Chemistry

- Moles, Mass Spectrometry, Elemental Composition, and Mixtures
<https://www.youtube.com/watch?v=Fpaq5BWRMvQ&list=PLoGgviqq4845Sy3UfnNh_PljzAptMR7MQ&index=4>
- Atomic Structure, Electron Configuration, Spectroscopy, Periodic Trends
<https://www.youtube.com/watch?v=7SznP-VIQNM&list=PLoGgviqq4845Sy3UfnNh_PljzAptMR7MQ&index=5>

- Chemical Bonds, Intramolecular Force, and Structure of Solids
<https://www.youtube.com/watch?v=BcRVEB_6PV0&list=PLoGgviqq4845Sy3UfnNh_PljzAptMR7MQ&index=6>
- Lewis Diagrams, Formal Charge, and VSEPR
<https://www.youtube.com/watch?v=TvrhHRf1FBo&list=PLoGgviqq4845Sy3UfnNh_PljzAptMR7MQ&index=7>
- Intermolecular Forces, Solids, Liquids, and Gases
<https://www.youtube.com/watch?v=NczVUxmtAk8&list=PLoGgviqq4845Sy3UfnNh_PljzAptMR7MQ&index=8>

College Prep Chemistry

- Mole Conversions <<https://www.google.com/search?client=firefox-b-1-d&q=mole+conversions+how+to#kpvalbx=1BmRXrqWNOWoytMPoMaM4Aw33>>
- Calculations for formula mass
<<<http://www.sciencegeek.net/Chemistry/taters/U4FormulaMass.htm>>>
- Mole Conversions
<<<http://www.sciencegeek.net/Chemistry/Review/GramsMoles/>>>
- Gram/ Mole/Volume
<<<http://www.sciencegeek.net/Chemistry/taters/Unit4GramMoleVolume.htm>>>

Applied Chemistry

- Metric Conversion Trick <<https://www.youtube.com/watch?v=5tHpDzXP-lg>>
- Metric Unit Conversions Shortcut
<<<https://www.youtube.com/watch?v=TY4Yoyur3X4>>>
- Metric-to-Metric Conversions<<<https://www.thoughtco.com/metric-to-metric-conversions-quiz-4052360>>>
- What is the Metric System<< <https://sciencing.com/metric-scale-6514055.html>>>
- Metric System Review<<<https://m.youtube.com/watch?v=b2JCZDeLGF4>>>
- Reading a meniscus<<<https://www.thoughtco.com/measurement-test-questions-reading-a-meniscus-604122>>>

Integrations of Science

- Biology: Controlled Experiments
<<https://www.youtube.com/watch?v=D3ZB2RTyIR4>>
- Interpreting graphs
<<<https://drive.google.com/file/d/0Bx72aSXCBO09QnpQMG9GaVFMRGs/view>>>
- Identifying independent and dependent variables
<<https://www.youtube.com/watch?v=PsiwH-TrMfs>>>

Feedback and Homeostasis

<<https://www.chino.k12.ca.us/cms/lib8/CA01902308/Centricity/Domain/3697/Heart%20Rate%20and%20Homeostasis.pdf>>

Anatomy

Tissue Types

<https://courses.lumenlearning.com/suny-ap1/chapter/types-of-tissues/> - reading with short self quiz

<https://toxtutor.nlm.nih.gov/08-004.html> - Another reading with a short self quiz

http://www2.yvcc.edu/histologyzoomer/HistologyTutorials/histology_tutorials.htm - virtual lab/tutorial

Biotechnology

Biotech uses in nutrition

<https://www.pnas.org/content/96/11/5968> - article general info

<https://academic.oup.com/jn/article/132/6/1384/4687980> - reading - balanced

<https://foodinsight.org/fact-sheet-benefits-of-food-biotechnology/> - article in the positive (for biotech in nutrition)

<https://www.omicsonline.org/open-access/concerns-regarding-food-biotechnology-an-ongoing-debate-2376-0214.1000106.php?aid=26280> - article highlighting concerns (for labelling of GMO food)

<https://www.nal.usda.gov/fnic/interactive-playground> - nutrition game links

<https://quizizz.com/admin/quiz/5851b2a46b32dc134a6de1f2/food-biotechnology> - short biotech and food quiz

Biology

Characteristics of Life

<https://www.ck12.org/biology/characteristics-of-life/lesson/Characteristics-of-Life-BIO/> - reading

<https://www.khanacademy.org/science/high-school-biology/hs-biology-foundations/hs-biology-and-the-scientific-method/a/what-is-life> - reading

https://www.diffen.com/difference/Abiotic_vs_Biotic - reading

https://www.ck12.org/biology/characteristics-of-life/asmtpractice/characteristics-of-life-Practice/?referrer=featured_content%3Freferrer%3Dconcept_details - practice

<https://schoolwires.henry.k12.ga.us/cms/lib/GA01000549/Centricity/Domain/864/Abiotic%20Factors%20Virtual%20Lab.pdf> - virtual lab directions

http://www.glencoe.com/sites/common_assets/science/virtual_labs/CT08/CT08.html - virtual lab link

AP Chemistry and Honor's Chemistry: Videos, Articles, and Interactive Reviews

- Acids, Bases, and Equilibrium: <<<https://phet.colorado.edu/en/simulation/acid-base-solutions>>> Particle diagrams showing the interactions of strong and weak acids and bases in solution
- Molecular Shapes: <<<https://phet.colorado.edu/en/simulation/molecule-shapes>>> Covalent Bonding and molecular geometry including structures with greater than octet arrangements.
- Atomic Interactions: <<<https://phet.colorado.edu/en/simulation/atomic-interactions>>> Potential energy diagrams when two particles approach each other. Also includes how weak Van der Waal attractions work
- Kahn Academy: Arrhenius Equation <<https://www.khanacademy.org/science/chemistry/chem-kinetics/arrhenius-equation/v/using-the-arrhenius-equation>>
- What is the Maxwell Boltzmann Distribution <<<https://www.khanacademy.org/science/physics/thermodynamics/temp-kinetic-theory-ideal-gas-law/v/maxwell-boltzmann-distribution>>>

College Prep Chemistry: Video and Interactive Reviews

- Periodic Behavior <http://www.sciencegeek.net/Chemistry/Review/PeriodicBehavior/>
- Ionic Bonding Review <<<http://www.sciencegeek.net/Chemistry/Review/IonicBonding/>>>
- Polyatomic Ion Concentration Game <<<http://www.sciencegeek.net/Concentration/Anions3/anions.html>>>
- Atomic Interactions: Potential Energy and atoms <<https://phet.colorado.edu/sims/html/atomic-interactions/latest/atomic-interactions_en.html>>

Applied Chemistry: Videos and Interactive Reviews

- Atomic Structure Review: <<http://www.sciencegeek.net/Chemistry/Review/AtomicStructure/>>
- The Science of Firework Color <<<https://www.youtube.com/watch?v=dW5OBrB4MRM>>>
- Isotopes and Atomic Mass Interactive Activities <<https://phet.colorado.edu/sims/html/isotopes-and-atomic-mass/latest/isotopes-and-atomic-mass_en.html>>
- Nuclear Fission <<<https://phet.colorado.edu/en/simulation/legacy/nuclear-fission>>>
- Build an Atom <<https://phet.colorado.edu/sims/html/build-an-atom/latest/build-an-atom_en.html>>

Integrations of Science: Video Reviews

- Exponential Growth: A Common Sense Explanation << <https://www.youtube.com/watch?v=0BSaMH4hINY>>>
- Characteristics of Living Things: What makes something alive? << <https://www.youtube.com/watch?v=30qOijVBS7o>>>
- Amoeba Sisters: Viruses <<https://www.youtube.com/watch?v=8FqITslU22s>>
- Live Science: Are Viruses Alive? <<https://www.livescience.com/58018-are-viruses-alive.html>>
- Is it Alive? << <https://wpsu.pbslearningmedia.org/resource/tdc02.sci.life.colt.alive/is-it-alive/>>>

USA.gov – information and videos on various career fields

quizlet.com – practice key science terms

Kahn Academy: Arrhenius Equation <<https://www.khanacademy.org/science/chemistry/chem-kinetics/arrhenius-equation/v/using-the-arrhenius-equation>>

Kahn Academy: Elementary Reactions <https://www.khanacademy.org/science/chemistry/chem-kinetics/arrhenius-equation/v/elementary-rate-laws>>>

Kahn Academy: Reaction Mechanism and Rate Determining

Steps<<https://www.khanacademy.org/science/chemistry/chem-kinetics/arrhenius-equation/v/mechanisms-and-the-rate-determining-step>>

Kahn Academy: Types of Catalysts <<https://www.khanacademy.org/science/chemistry/chem-kinetics/arrhenius-equation/a/types-of-catalysts>>

Quizlet: Naming Acids Pogil <<https://quizlet.com/198463424/naming-acids-pogil-flash-cards/>>

Writing formulas for acids <<https://www.google.com/search?client=firefox-b-l-d&q=writing+formulas+for+acids>>

Naming and writing formulas for ionic compounds

<https://www.saddleback.edu/faculty/jzoval/worksheets_tutorials/ch3worksheets/compound_names_and_formulas_tutorial_and_worksheet.pdf>

Review of Periodic Trends: <<<https://www.youtube.com/watch?v=hePb00CqvP0>>>

Amoeba Sisters: Viruses <<https://www.youtube.com/watch?v=8FqITslU22s>>

Live Science: Are Viruses Alive? <<https://www.livescience.com/58018-are-viruses-alive.html>>

The viral life-cycle: <<https://www.youtube.com/watch?v=uIut0oVWCEg>>

<https://www.biologycorner.com/category/worksheets/anatomy/> - Anatomy worksheets, etc

<http://www.anatomyarcade.com/> - Anatomy Games

<https://www.learningnurse.org/games/tr-anatomy1/game.html> - Online Quiz

<https://sciencespot.net/Pages/classforscistarters.html> - CSI challenges

<http://stem-works.com/subjects/3-forensics/activities> - Forensic Activities

<https://www.biologycorner.com/category/worksheets/cell-biology/> - cell biology worksheets

<https://www.biologycorner.com/category/worksheets/evolution/> - Evolution Materials

<https://www.biologycorner.com/category/worksheets/genetics/> - Genetics Materials

<https://www.biomanbio.com/> - Biology Games

<https://askabiologist.asu.edu/games-and-simulations> - games and simulations

National Geographic Kids - <https://kids.nationalgeographic.com/>

- This site provides a number of various resources for students, including articles, games, videos, and interactive activities.

PhET - <https://phet.colorado.edu/en/simulations/category/biology>

- These interactive simulations cover a number of topics

CK-12 Foundation - <https://flexbooks.ck12.org/cbook/ck-12-biology-flexbook-2.0/>

- This website has full lessons that include reading, videos, quizzes, and games. Linked is the section on Biology. Students can choose any of the topics

Newsela - <https://newsela.com/>

- This online news source scales reading level for the user. Students may browse through specific text sets for science.

Chemistry Olympiad Fun:

<https://www.acs.org/content/acs/en/education/students/highschool/olympiad/pastexams.html>

Interactive AP Chemistry on Science Geek (Reaction Kinetics):

<<<http://www.sciencegeek.net/APchemistry/APtaters/chap12rev.>

Kahn Academy Chemistry <https://www.khanacademy.org/science/chemistry/nuclear-chemistry>

Quizlet Mitosis and Meiosis practice: <https://quizlet.com/31563693/biology-mitosis-and-meiosis-practice-test-flash-cards/>

Kahn Academy Mitosis Practice: <https://www.khanacademy.org/science/biology/cellular-molecular-biology/mitosis/e/mitosis-questions>

Kahn Academy Meiosis Practice: <<<https://www.khanacademy.org/science/biology/cellular-molecular-biology#meiosis>>>

Study Island

Anatomy

<https://www.getbodysmart.com/> - General Anatomy

<https://www.kenhub.com/> - General Anatomy

<http://www.g2conline.org/2022> - 3D Brain

<https://faculty.washington.edu/chudler/video.html> - brain science videos

Biotechnology

<https://www.centredessciencesdemontreal.com/jeux-experiences/autopsie/en/index.html> - interactive crime scene

<https://www.crimesceneinvestigatoredu.org/what-is-forensic-science/>

Biology

<https://faculty.washington.edu/chudler/video.html> - brain science videos

<https://faculty.washington.edu/chudler/experi.html> - brain games

<https://www.biointeractive.org/home> - hhmi biointeractive resources from videos to labs

<https://www.cellsalive.com/> - interactives and videos for different cell concepts

<http://www.pbs.org/wgbh/evolution/> - natural selection information

<https://phet.colorado.edu/en/simulations/category/biology> - interactive biology simulations