General Resources:

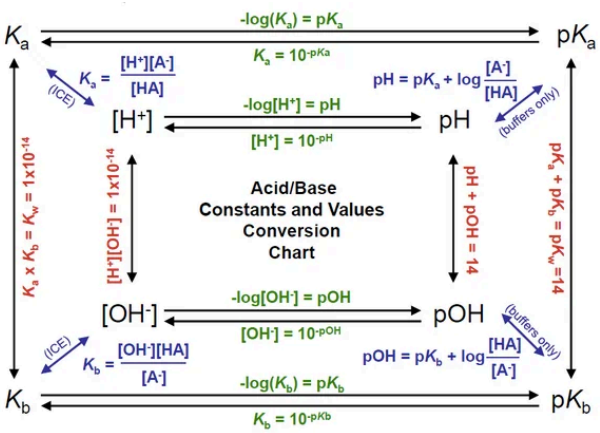
https://www.youtube.com/@NinjaNerdOfficial

Gen Chem:

Crash Course:

https://www.youtube.com/watch?v=uVFCOfSuPTo&list=PL8dPuuaLjXtPHzzYuWy6fYEaX9mQQ8oGr

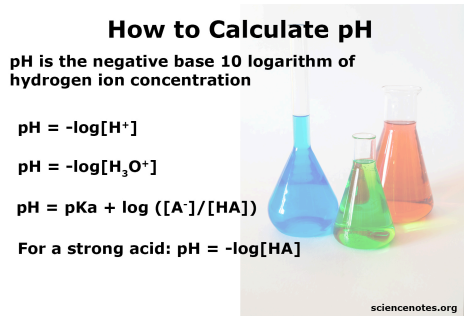
- Acid-Base reactions



Practice Questions:

https://www.khanacademy.org/science/ap-chemistry-beta/x2eef969c74e0d802:acids-and-bases/x2eef969c74e0d802:acidbase-reactions/e/acid-base-reactions

- pH equation

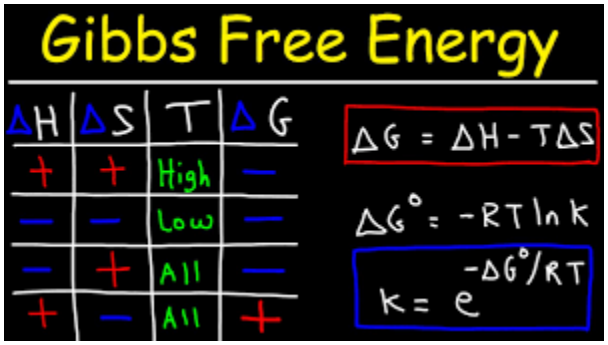


Videos:

How to calculate without a calculator
https://www.youtube.com/watch?v=Mgph6gmIuwg

General Video
https://www.youtube.com/watch?v=OEW4-Sfyvik

- Gib's free energy equation

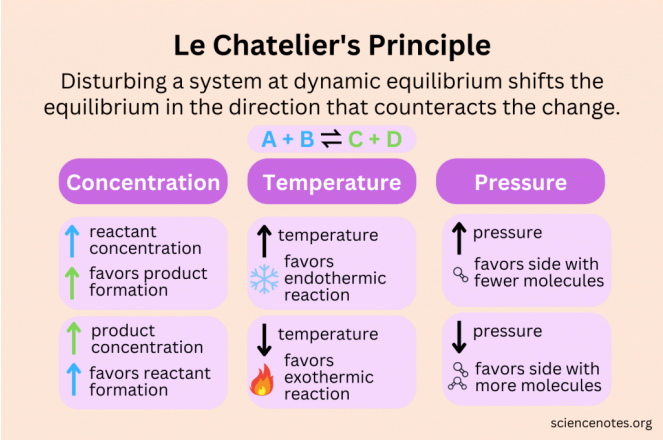


Video:

General Overview

https://www.youtube.com/watch?v=2KuNzB0cZL4

- Le Chatlier's Principle



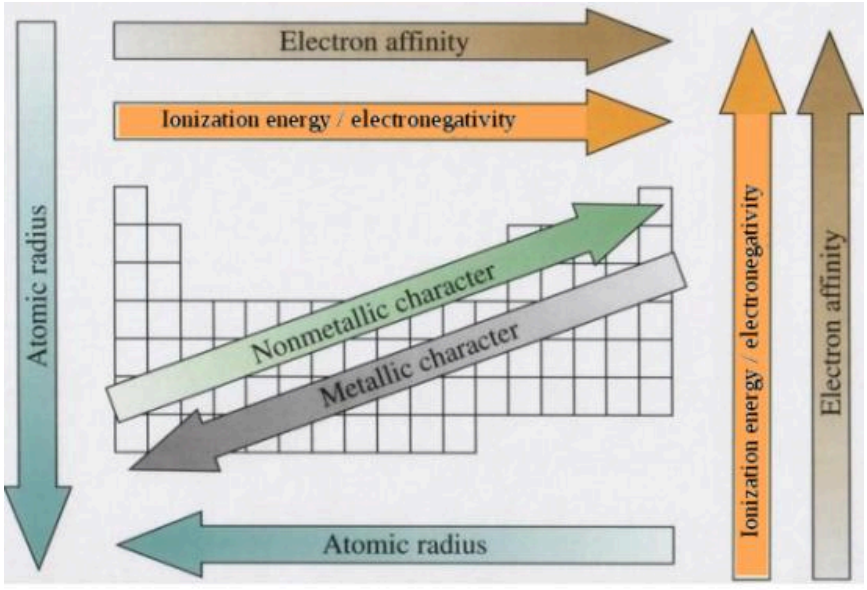
Videos:

General Overview
https://www.youtube.com/watch?v=bNcTt3l3Q8k

Menonomics:

The elements that are diatomic gases at standard conditions:
Have No Fear Of Ice Cold Beer
(H2 N2 F2 O2 I2 Cl2 Br2)
or
“huh-noff cull-bree”: H2 N2 O2 F2 Cl2 Br2 I2

- Periodic Trends



Videos:

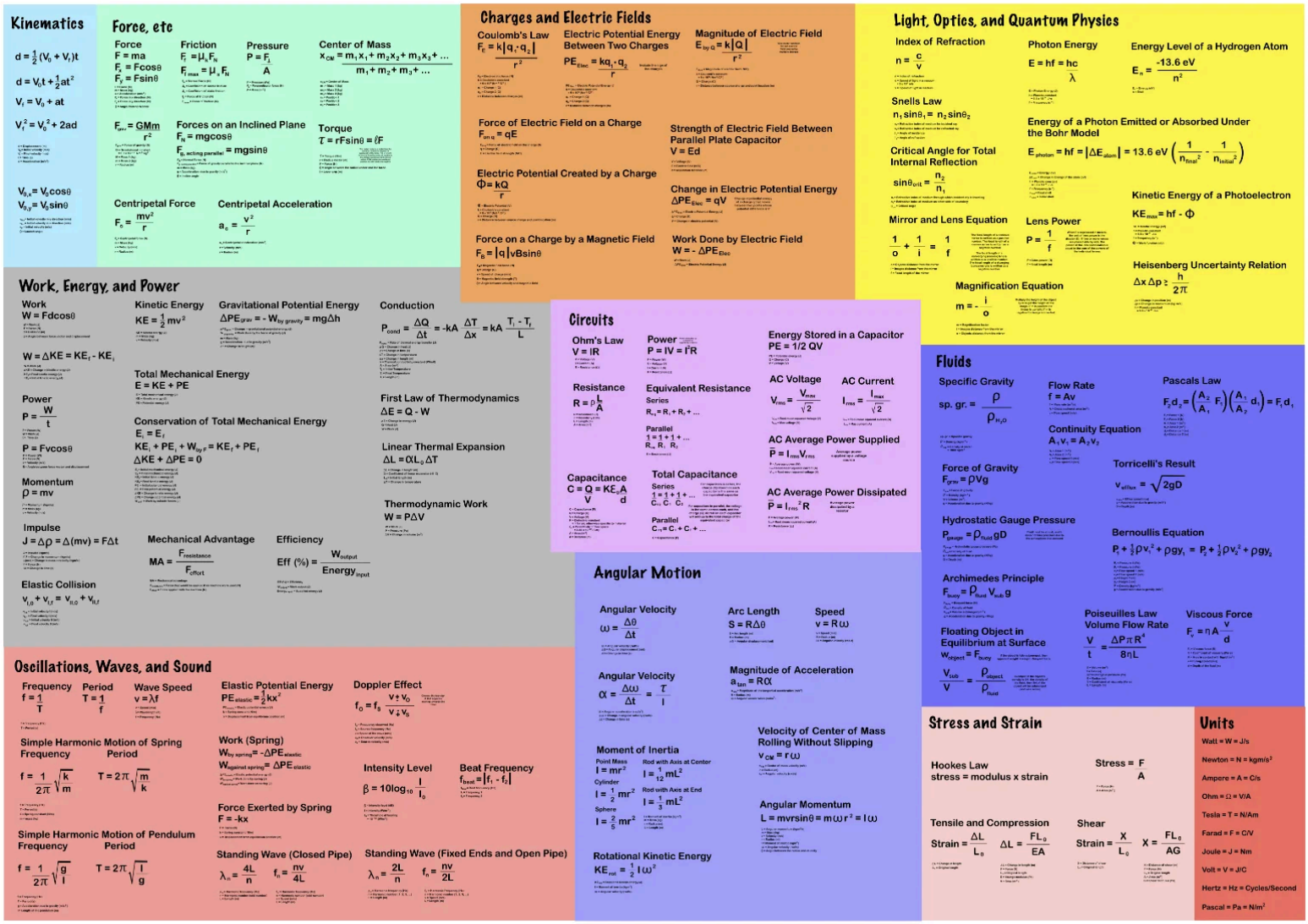
General Overview
https://www.khanacademy.org/science/ap-chemistry-beta/x2eef969c74e0d802:atomic-structure-and-properties/x2eef969c74e0d802:periodic-trends/v/periodic-trends-and-coulombs-law

Physics:

Crash Course Videos:

https://www.youtube.com/watch?v=OoO5d5P0Jn4&list=PL8dPuuaLjXtN0ge7yDk_UA0ldZJdhwkoV

- Every equation



Videos:

General Overview of how they connect
https://www.youtube.com/watch?v=BQKYRVIoRE8

- Units

SI Derived Units				
Derived quantity	**Name**	**Symbol**	**Expression in terms of other SI units**	**Expression in terms of SI base units**
Frequency	Hertz	Hz	-	s^{-1}
Force	Newton	N	-	$m \cdot kg \cdot s^{-2}$
Pressure, stress	Pascal	Pa	N/m^2	$m^{-1} \cdot kg \cdot s^{-2}$
Energy, work, quantity of heat	Joule	J	N·m	$m^2 \cdot kg \cdot s^{-2}$
Power, radiant flux	Watt	W	J/s	$m^2 \cdot kg \cdot s^{-3}$
Electric charge, quantity of electricity	Coulomb	C	-	s·A
Electric potential difference, electromotive force	Volt	V	W/A	$m^2 \cdot kg \cdot s^{-3} \cdot A^{-1}$
Capacitance	Farad	F	C/V	$m^{-2} \cdot kg^{-1} \cdot s^4 \cdot A^2$
Electric resistance	Ohm	Ω	V/A	$m^2 \cdot kg \cdot s^{-3} \cdot A^{-2}$
Electric conductance	Siemens	S	A/V	$m^{-2} \cdot kg^{-1} \cdot s^3 \cdot A^2$
Magnetic flux	Weber	Wb	V·s	$m^2 \cdot kg \cdot s^{-2} \cdot A^{-1}$
Magnetic flux density	Tesla	T	Wb/m^2	$kg \cdot s^{-2} \cdot A^{-1}$
Inductance	Henry	H	Wb/A	$m^2 \cdot kg \cdot s^{-2} \cdot A^{-2}$

Video

Overview::
https://www.youtube.com/watch?v=38xkmmT5bjE

- Optics

For BOTH mirror and lens:		**Lens only:**
1/f = 1/p + 1/ q Obj: p= usually positive Img: +q= real; -q= virtual	M = -i/o +m = upright -m = inverted	power/strength: P=1/F Lens Systems: $M_{tot}=M_1*M_2...$ $1/f_{tot}=1/f_1+1/f_2+...$ $P_{tot}= P_1+P_2+...$

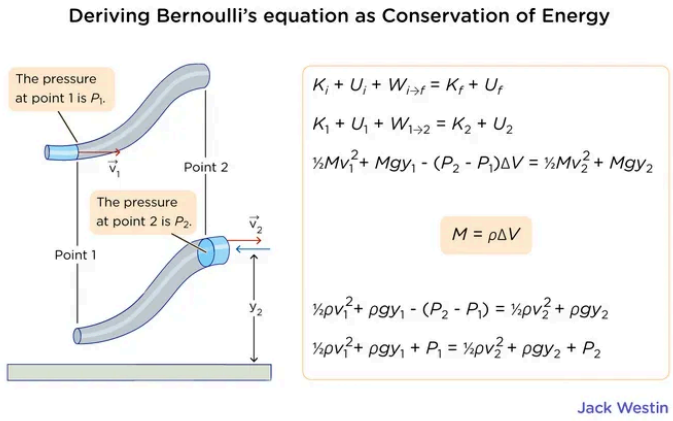
mirror	**lens**	For lens, use to correct:
Convex = diverging	Convex = converging	Hyperopia (far-sight)
Concave = converging	Concave = diverging	Myopia (near-sight)

Converging: f > 0		**diverging : f < 0**
	Image will be…	Image will ALWAYS be
F > obj	UV: upright, virtual (enlarged)	UV: upright, virtual
F = obj	No image	
Obj > f	IR: inverted, real	

Mnemonic: UV → IR (UV comes first on EM spectra)

Overview:
https://blog.blueprintprep.com/mcat/a-high-level-guide-to-high-yield-mcat-optics-concepts/

- Fluids



Overview:
https://www.youtube.com/watch?v=gRRnaIZ_v24

- Decay

Alpha decay	
${}^{A}_{Z}X \rightarrow {}^{A-4}_{Z-2}Y + {}^{4}_{2}\alpha$	A - atomic mass Z - atomic number a - alpha particle (helium nucleus)
Beta-minus decay	
${}^{A}_{Z}X \rightarrow {}^{A}_{Z+1}Y + {}^{0}_{0}\beta^{-}$	A - atomic mass Z - atomic number β- - electron
Beta-plus decay	
${}^{A}_{Z}X \rightarrow {}^{A}_{Z-1}Y + {}^{0}_{0}\beta^{+}$	A - atomic mass Z - atomic number β+ - positron
Gamma decay	
${}^{A}_{Z}X^{*} \rightarrow {}^{A}_{Z}X + c$	A - atomic mass Z - atomic number c - high energy radiation
Electron capture	
${}^{A}_{Z}X + e^{-} \rightarrow {}^{A}_{Z-1}Y$	A - atomic mass Z - atomic number

Videos:

Overview:
https://www.youtube.com/watch?v=IfHLiLBoWfg

Psych/Soc:

Crash Course Videos:

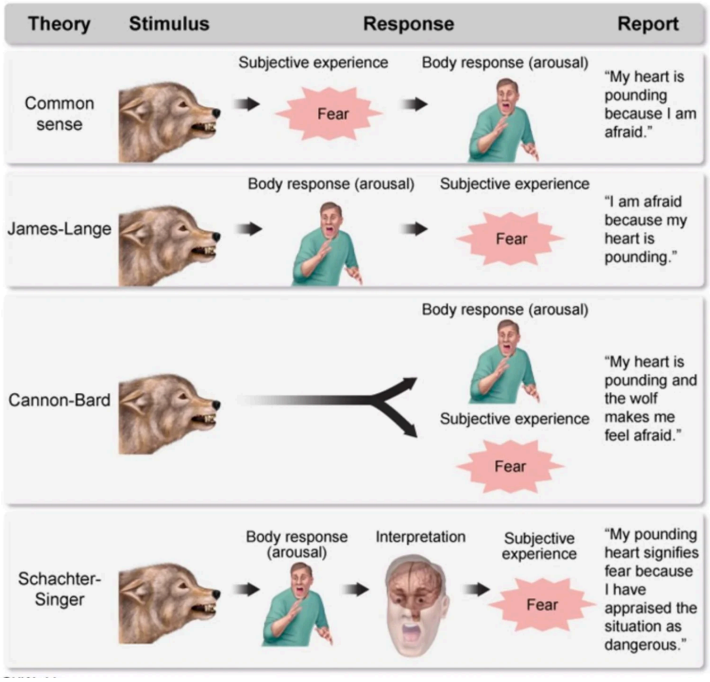
Psych:

https://www.youtube.com/watch?v=eal4-A89IWY&list=PL8dPuuaLjXtOPRKzVLY0jJY-uHOH9KVU6

Soc:

https://www.youtube.com/watch?v=ylXVn-wh9eQ&list=PL8dPuuaLjXtMJ-AfB_7J1538YKWkZAnGA

- Emotion



Website Information:
https://jackwestin.com/resources/mcat-content/emotion

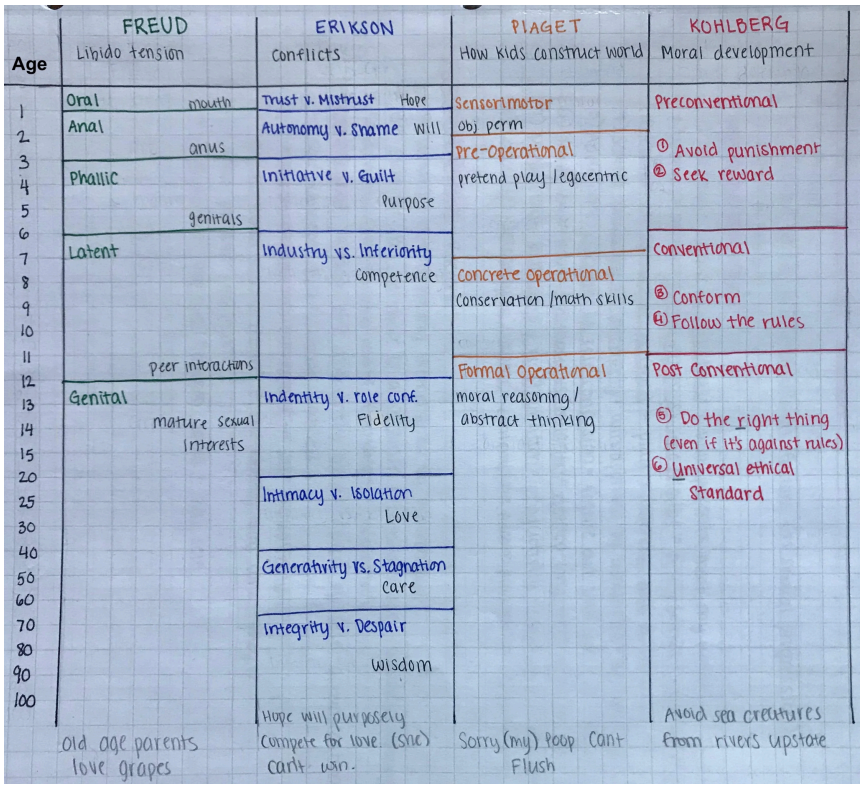
Videos:
https://www.youtube.com/watch?v=TQ51Gsb98ec

https://www.youtube.com/watch?v=ylWKrQTznXc

https://www.youtube.com/watch?v=qOYCeAlukMk

https://www.youtube.com/watch?v=FkDVucEoJpU&t=5s

- Stages of development



Piaget's Theory

Stage	Age Range	Description
Sensorimotor	0-2 years	Coordination of senses with motor response, sensory curiosity about the world. Language used for demands and cataloguing. Object permanence developed
Preoperational	2-7 years	Symbolic thinking, use of proper syntax and grammar to express full concepts. Imagination and intuition are strong, but complex abstract thought still difficult. Conservation developed.
Concrete Operational	7-11 years	Concepts attached to concrete situations. Time, space, and quantity are understood and can be applied, but not as independent concepts
Formal Operations	11+	Theoretical, hypothetical, and counterfactual thinking. Abstract logic and reasoning. Strategy and planning become possible. Concepts learned in one context can be applied to another.

The Psychology Notes Headquarter - http://www.PsychologyNotesHQ.com

isolation.

Erikson's Stages of Psychosocial Development

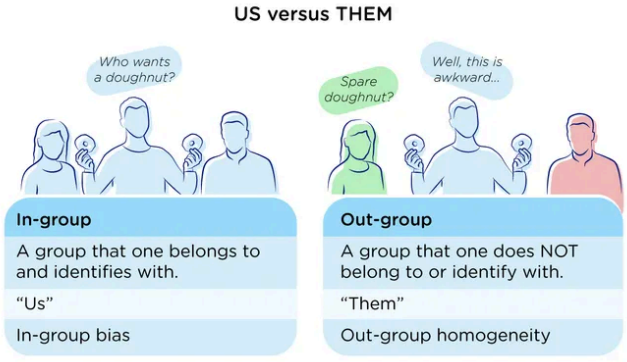
Approximate Age	Psychosocial Crisis/Task	Virtue Developed
Infant - 18 months	Trust vs Mistrust	Hope
18 months - 3 years	Autonomy vs Shame/Doubt	Will
3-5 years	Initiative vs Guilt	Purpose
5-13 years	Industry vs Inferiority	Competency
13-21 years	Identity vs Confusion	Fidelity
21-39 years	Intimacy vs Isolation	Love
40-65 years	Generativity vs Stagnation	Care
65 and older	Integrity vs Despair	Wisdom

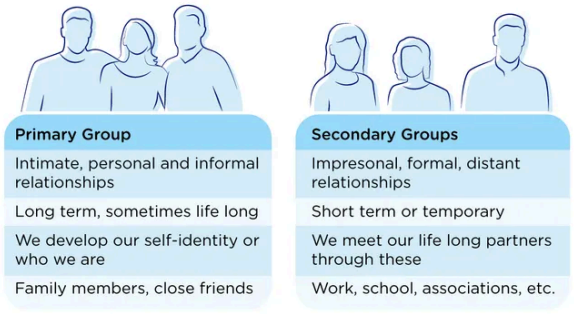
Jack Westin

Videos:

Piaget:
https://www.youtube.com/watch?v=Jt3-PIC2nCs
Eriksons:
https://www.youtube.com/watch?v=SIoKwUcmivk
Kohlberg:
https://www.youtube.com/watch?v=Onkd8tChC2A
Freuds:
https://www.youtube.com/watch?v=nG7yosFQHP4

- group behavior





Jack Westin

Videos:
https://www.youtube.com/watch?v=wOw7LWCW_Zk

- Biases

20 COGNITIVE BIASES THAT SCREW UP YOUR DECISIONS

1. Anchoring bias.

People are **over-reliant** on the first piece of information they hear. In a salary negotiation, whoever makes the first offer establishes a range of reasonable possibilities in each person's mind.

2. Availability heuristic.

People **overestimate the importance** of information that is available to them. A person might argue that smoking is not unhealthy because they know someone who lived to 100 and smoked three packs a day.

3. Bandwagon effect.

The probability of one person adopting a belief increases based on the number of people who hold that belief. This is a powerful form of **groupthink** and is reason why meetings are often unproductive.

4. Blind-spot bias.

Failing to recognize your own cognitive biases is a bias in itself. People notice cognitive and motivational biases much more in others than in themselves.

5. Choice-supportive bias.

When you choose something, you tend to feel positive about it, even if that **choice has flaws**. Like how you think your dog is awesome — even if it bites people every once in a while.

6. Clustering illusion.

This is the tendency to **see patterns in random events**. It is key to various gambling fallacies, like the idea that red is more or less likely to turn up on a roulette table after a string of reds.

7. Confirmation bias.

We tend to listen only to information that confirms our **preconceptions** — one of the many reasons it's so hard to have an intelligent conversation about climate change.

8. Conservatism bias.

Where people favor prior evidence over new evidence or information that has emerged. People were **slow to accept** that the Earth was round because they maintained their earlier understanding that the planet was flat.

9. Information bias.

The tendency to **seek information when it does not affect action**. More information is not always better. With less information, people can often make more accurate predictions.

10. Ostrich effect.

The decision to **ignore dangerous or negative information** by "burying" one's head in the sand, like an ostrich. Research suggests that investors check the value of their holdings significantly less often during bad markets.

11. Outcome bias.

Judging a decision based on the **outcome** — rather than how exactly the decision was made in the moment. Just because you won a lot in Vegas doesn't mean gambling your money was a smart decision.

12. Overconfidence.

Some of us are **too confident about our abilities**, and this causes us to take greater risks in our daily lives. Experts are more prone to this bias than laypeople, since they are more convinced that they are right.

13. Placebo effect.

When **simply believing** that something will have a certain effect on you causes it to have that effect. In medicine, people given fake pills often experience the same physiological effects as people given the real thing.

14. Pro-innovation bias.

When a proponent of an innovation tends to **overvalue its usefulness** and undervalue its limitations. Sound familiar, Silicon Valley?

15. Recency.

The tendency to weigh the **latest information** more heavily than older data. Investors often think the market will always look the way it looks today and make unwise decisions.

16. Salience.

Our tendency to focus on the **most easily recognizable features** of a person or concept. When you think about dying, you might worry about being mauled by a lion, as opposed to what is statistically more likely, like dying in a car accident.

17. Selective perception.

Allowing our expectations to **influence how we perceive** the world. An experiment involving a football game between students from two universities showed that one team saw the opposing team commit more infractions.

18. Stereotyping.

Expecting a group or person to have certain qualities without having real information about the person. It allows us to quickly identify strangers as friends or enemies, but people tend to **overuse and abuse** it.

19. Survivorship bias.

An error that comes from focusing only on surviving examples, causing us to **misjudge a situation**. For instance, we might think that being an entrepreneur is easy because we haven't heard of all those who failed.

20. Zero-risk bias.

Sociologists have found that **we love certainty** — even if it's counterproductive. Eliminating risk entirely means there is no chance of harm being caused.

SOURCES: Brain Biases; Ethics Unwrapped; Explorable; Harvard Magazine; HowStuffWorks; LearnVest; Outcome bias in decision evaluation, Journal of Personality and Social Psychology; Psychology Today; The Bias Blind Spot: Perceptions of Bias in Self Versus Others, Personality and Social Psychology Bulletin; The Cognitive Effects of Mass Communication, Theory and Research in Mass Communications; The less-is-more effect: Predictions and tests, Judgment and Decision Making; The New York Times; The Wall Street Journal; Wikipedia; You Are Not So Smart; ZhurnalyWiki

BUSINESS INSIDER

MCAT Attributional Biases

	# of distinct groups	Primary person (in-group)	Other person (out-group)	Primary person attributes:
Self-serving bias	1	✔		• Their (primary) success to ***internal factors*** • Their (primary) failures to ***external factors***
Actor-observer bias	2	✔	✔	• Primary person's behavior to ***external factors*** • Other person's behavior to ***internal factors***
Fundamental attribution error	1		✔	• Other person's behavior to ***internal factors***

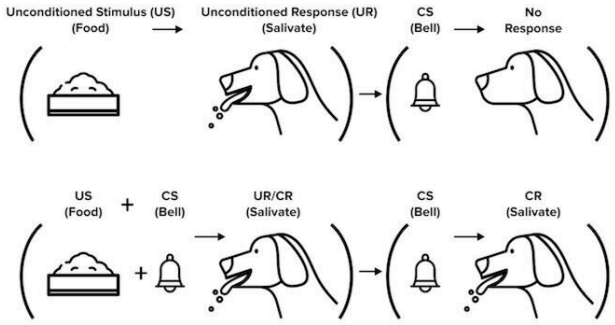
- Internal factors = dispositional attribution (i.e., personality)
- External factors = situational attribution (i.e., environment)

Videos:
https://www.youtube.com/watch?v=h_--qw-fv3k

https://www.youtube.com/watch?v=ig-SVifJUKw

Playlist:
https://www.youtube.com/watch?v=PQyQadCqLAI&list=PL1O_shUH1zgVuS40UY1sddtG8TlfTnQKY

- Learning



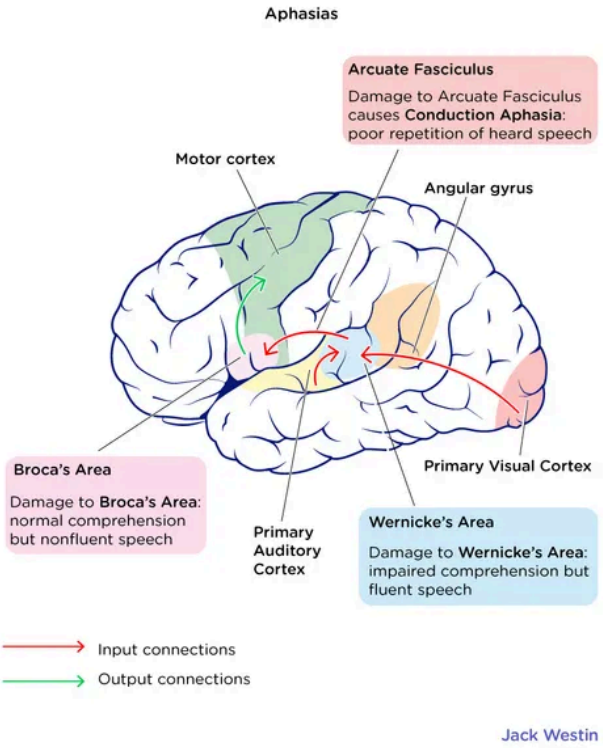
	Reinforcement	Punishment
Positive	Add pleasant Ex: Give money	Add unpleasant Ex: Give shock
Negative	Remove unpleasant Ex: Take away loud noise	Remove pleasant Ex: Take away food

Videos:
CrashCourse Psychology – Learning:
https://www.youtube.com/watch?v=128Ts5r9NRE&list=PL8dPuuaLjXtOfse2ncvffeelTrqvhrz8H

Khan Academy Overview:
https://www.khanacademy.org/test-prep/mcat/behavior/learning-slug/v/learning

Khan Academy Practice Questions:
https://www.khanacademy.org/test-prep/mcat/behavior/learning-slug/e/learning

- Language



Videos:
CrashCourse Psychology – Language:
https://www.youtube.com/watch?v=8SOQduoLgRw&list=PL8dPuuaLjXtOfse2ncvffeelTrqvhrz8H

Khan Academy Overview:
https://www.khanacademy.org/test-prep/mcat/processing-the-environment/language/v/theories-of-language-development

Khan Academy Practice Questions:
https://www.khanacademy.org/test-prep/mcat/processing-the-environment/language/e/language

- Theories of Sociology

Major theoretical approaches to sociology			
Theory	**Description**	**Perspective**	**Theorists**
Functionalism	• Society = an organism • Each part of society works to maintain dynamic equilibrium (homeostasis)	Macro	Émile Durkheim, Talcott Parsons
Conflict	• Society = struggle for limited resources • Inequality based on social class	Macro	Karl Marx, Max Weber
Social constructionism	• Social actors define what is real • Knowledge about world based on interactions	Macro or micro	(Not critical for exam)
Symbolic interactionism	• Meaning & value attached to symbols • Individual interactions based on these symbols	Micro	Charles Cooley, George Herbert Mead
Rational choice/social exchange	• Individual behaviors & interactions attempt to maximize personal gain & minimize personal cost	Micro	(Not critical for exam)
Feminist	• Examines gender inequality in society	Macro or micro	(Not critical for exam)

Videos:
CrashCourse Sociology Playlist:
https://www.youtube.com/watch?v=3smC4a3sZzA&list=PL8dPuuaLjXtOfse2ncvffeelTrqvhrz8H

Khan Academy Overview:
https://www.khanacademy.org/test-prep/mcat/society-and-culture/social-structures/v/social-theories-overview

Khan Academy Practice Questions:
https://www.khanacademy.org/test-prep/mcat/society-and-culture/social-structures/e/social-structures

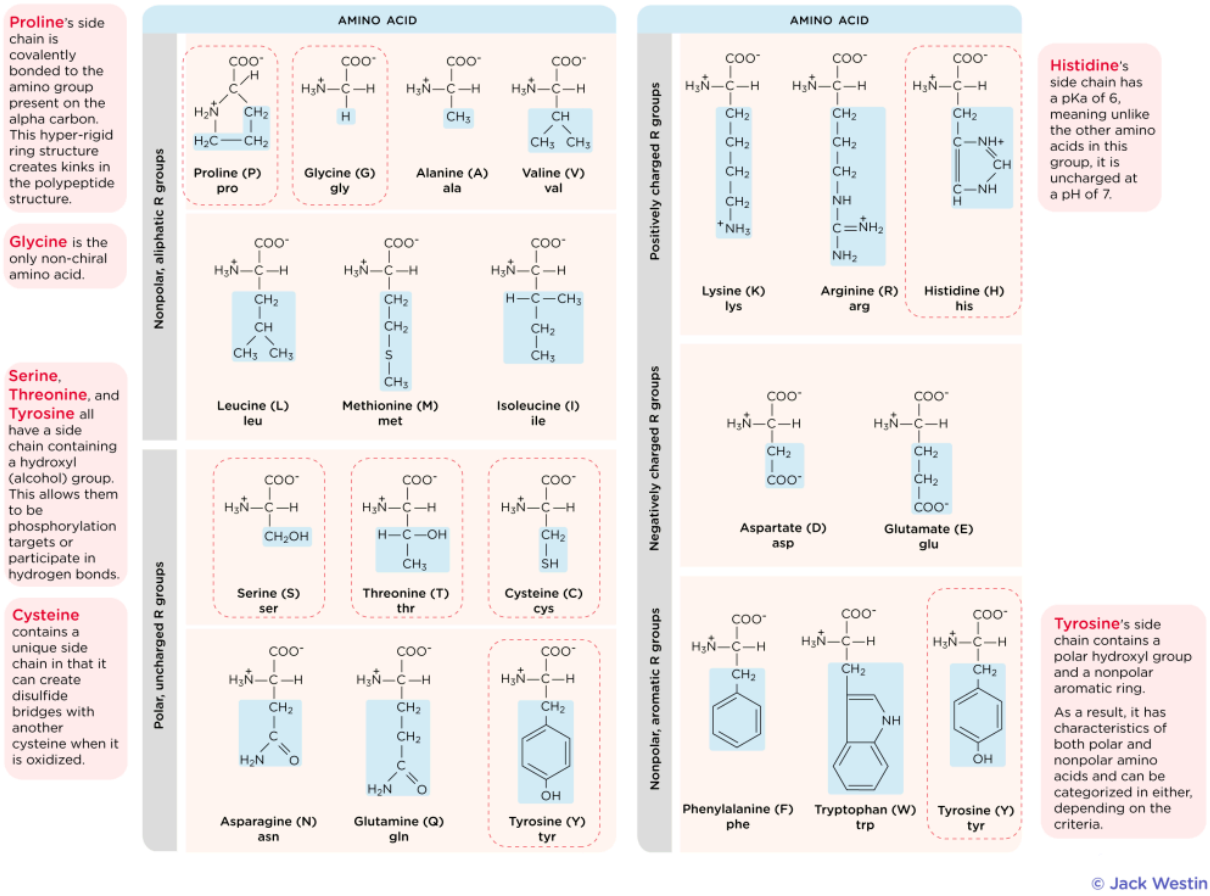
Biochem:

Crash Course Videos:

https://www.youtube.com/watch?v=_l7vMDaeG0M&list=PLTGmFhsK1lNRdHidI-tFZ0Otis7BICByD

https://www.youtube.com/watch?v=RNgOjudUgFc&list=PLTGmFhsK1lNR2o6Ux8x3sAiiARX-uJpS0

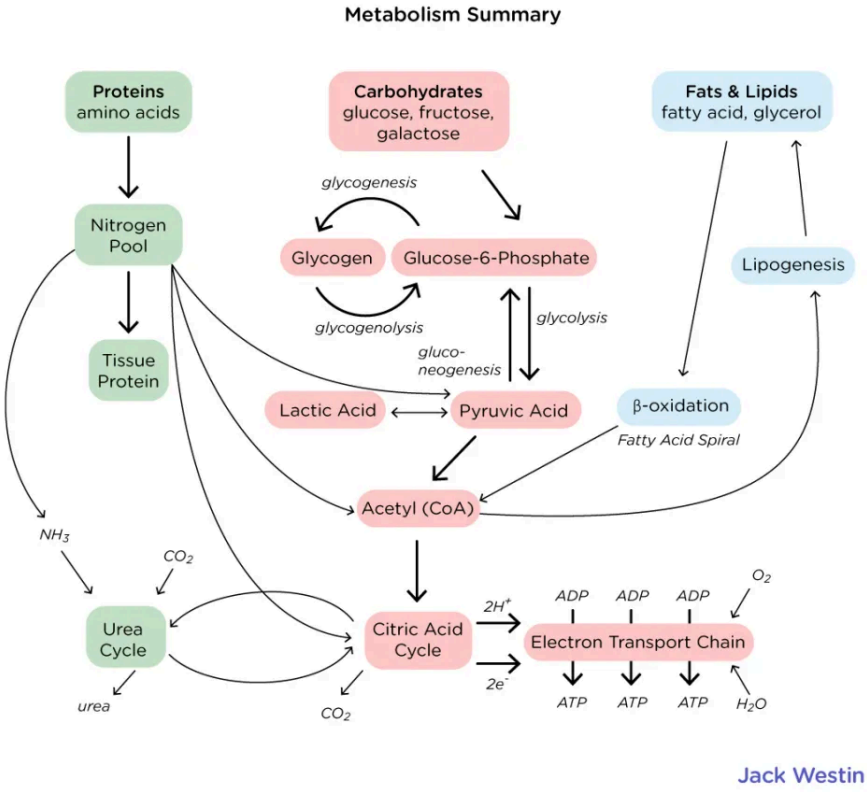
- Amino Acids



Pixorize - Amino Acids Visual Mnemonic:
https://www.pixorize.com/view/biochemistry/2021/amino-acids

Leah4Sci - Amino Acid Cheat Sheet: https://www.youtube.com/watch?v=RTs79YxWpAU

- Metabolic Pathways

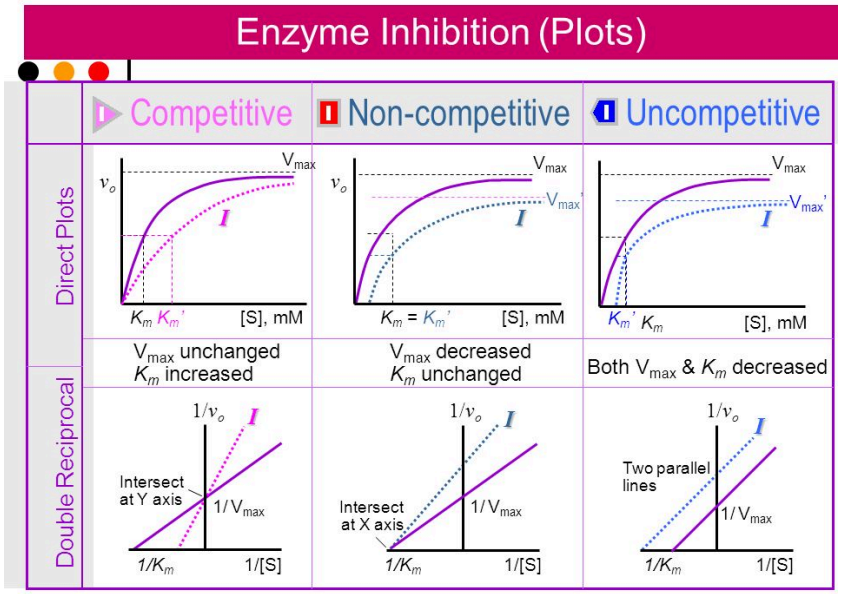


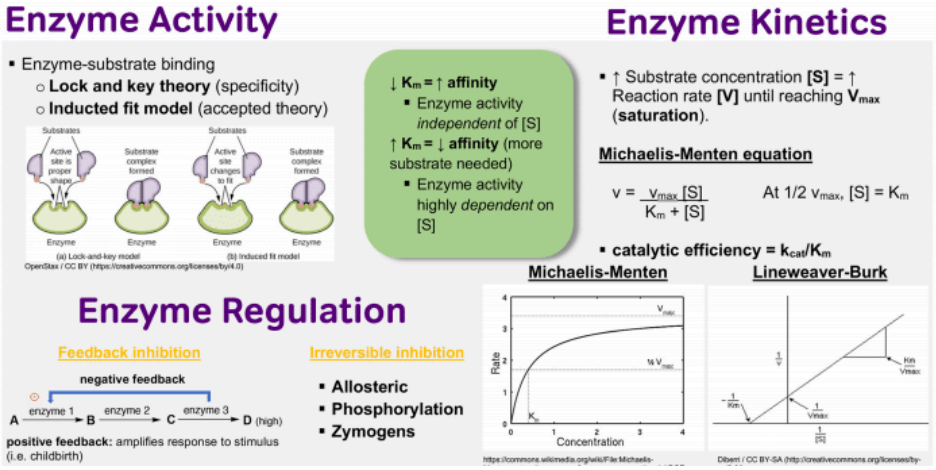
Khan Academy - Glycolysis Overview: https://www.khanacademy.org/science/biology/cellular-respiration-and-fermentation/glycoAK

Lectures - Krebs Cycle: https://www.youtube.com/watch?v=cDCG81EMO1o

AK Lectures - Electron Transport Chain: https://www.youtube.com/watch?v=iMLd9bJxWtI

- Enzyme Kinetics





AK Lectures - Enzyme Kinetics Series: https://www.youtube.com/playlist?list=PL6C32FE2F76838C29

Leah4Sci - Enzyme Kinetics: https://www.youtube.com/watch?v=AC7mNwTgGuw

Biology:

Crash Course Videos:

https://www.youtube.com/watch?v=rDGqkMHPDqE&list=PL8dPuuaLjXtOAKed_MxxWBNaPno5h3Zs8&index=20

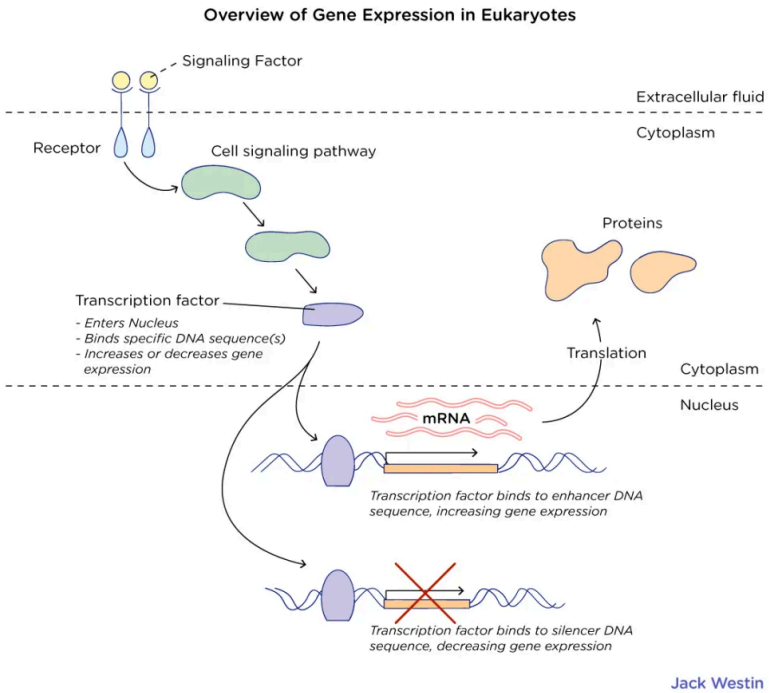
Old

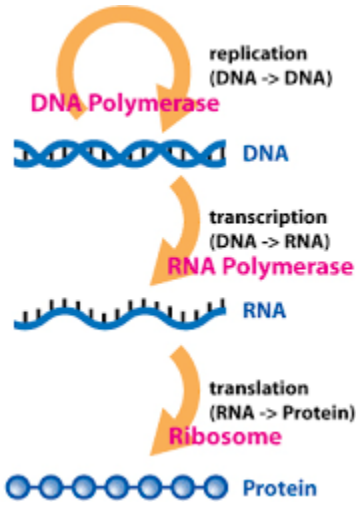
https://www.youtube.com/watch?v=gMOoMcsGTO4&list=PL3EED4C1D684D3ADF

Kids:

https://www.youtube.com/watch?v=PWGBqskV1UQ&list=PL8dPuuaLjXtPW_ofbxdHNciuLoTRLPMgB

- Central Dogma

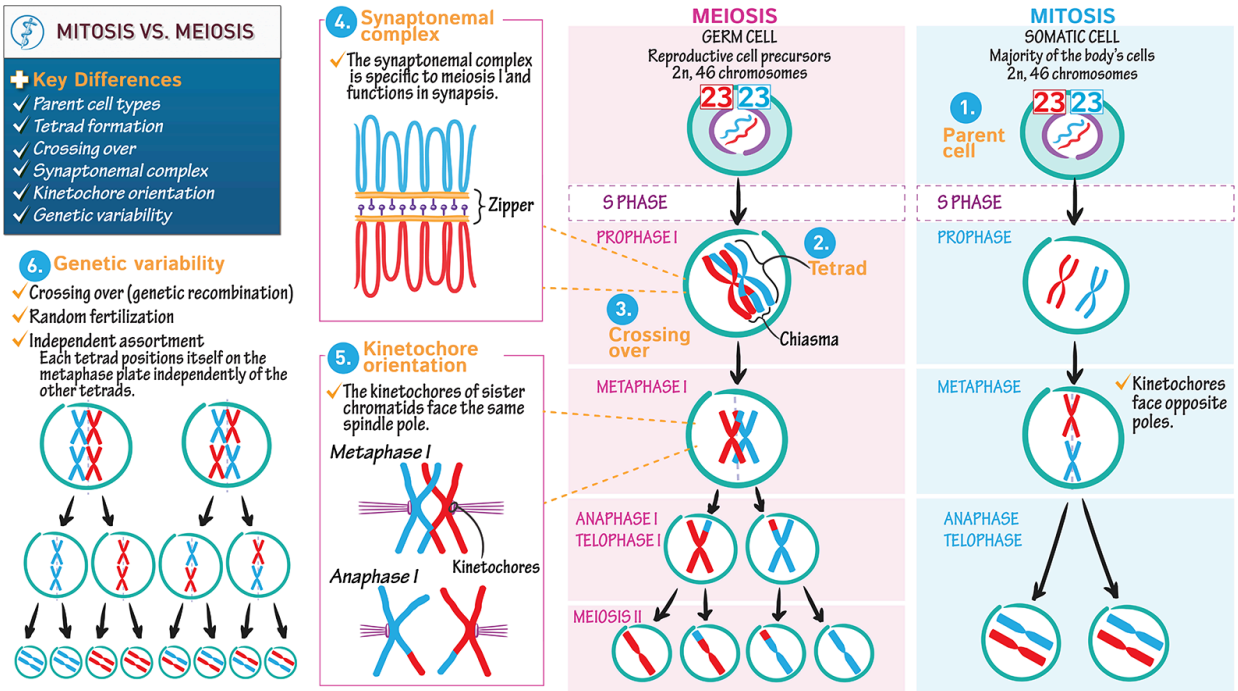




Khan Academy - DNA to RNA to Protein:
https://www.khanacademy.org/science/biology/gene-expression-central-dogma

Crash Course - Molecular Biology: https://www.youtube.com/watch?v=2BwWavExcFI

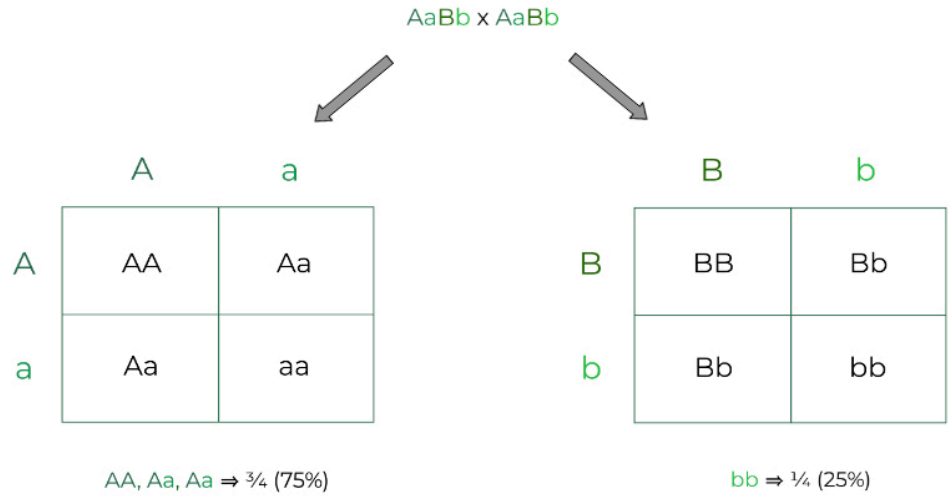
- Mitosis & Meiosis



Crash Course - Mitosis: https://www.youtube.com/watch?v=L0k-enzoeOM

Crash Course - Meiosis: https://www.youtube.com/watch?v=VzDMG7ke69g

- Properties of Genetics



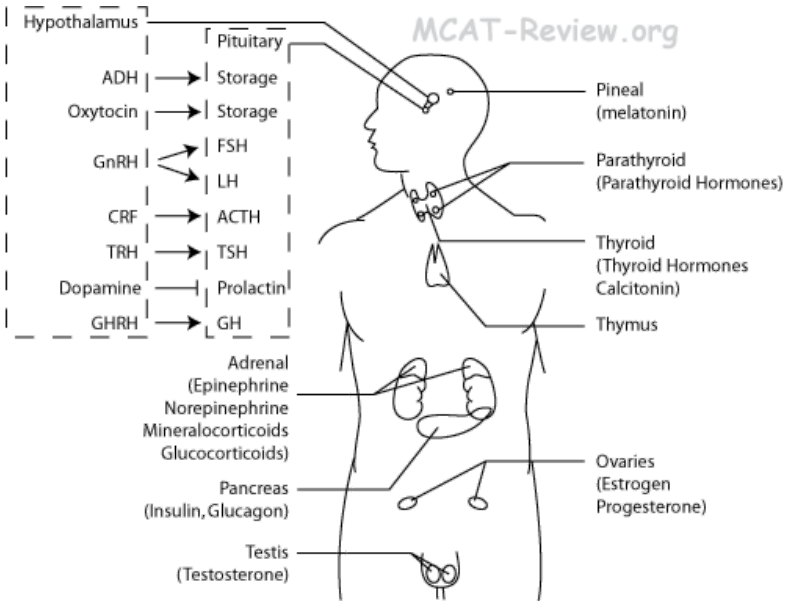
Bozeman - Mendelian Genetics: https://www.youtube.com/watch?v=Mehz7tCxjSE

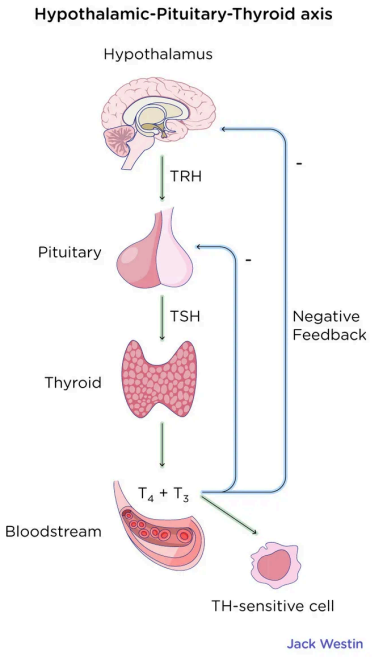
Crash Course - Heredity: https://www.youtube.com/watch?v=CBezq1fFUEA

Memonomics:

The classification hierarchy for living things:
King Philip Comes Over For Good Sushi
(Kingdom, Phylum, Class, Order, Family, Genus, Species)

- Hormones / Endocrine System





Khan Academy - Hormonal Regulation:
https://www.khanacademy.org/test-prep/mcat/organ-systems/endocrine-system/v/hormoCrash

Course - Endocrine System: https://www.youtube.com/watch?v=3aQxkF9cGyc

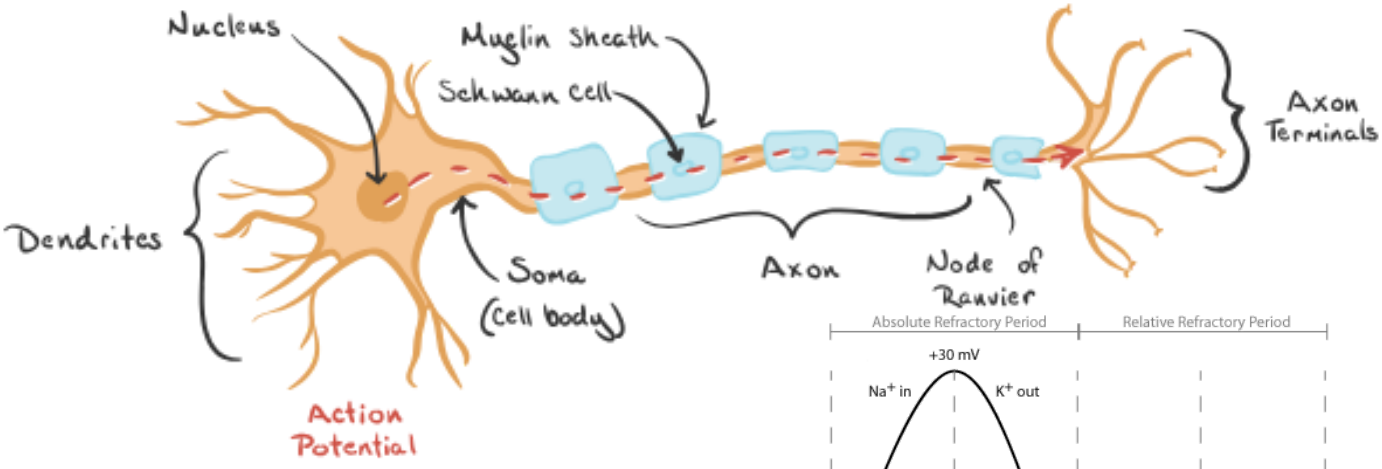
Memonomics:

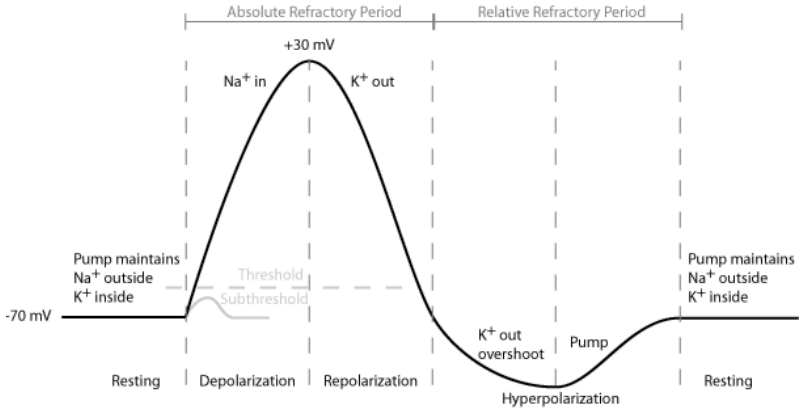
AMPLE GiFTs – is an acronym for the anterior pituitary hormones (ACTH, MSH, prolactin, LH, beta-endorphin, GH, FSH, TSH).

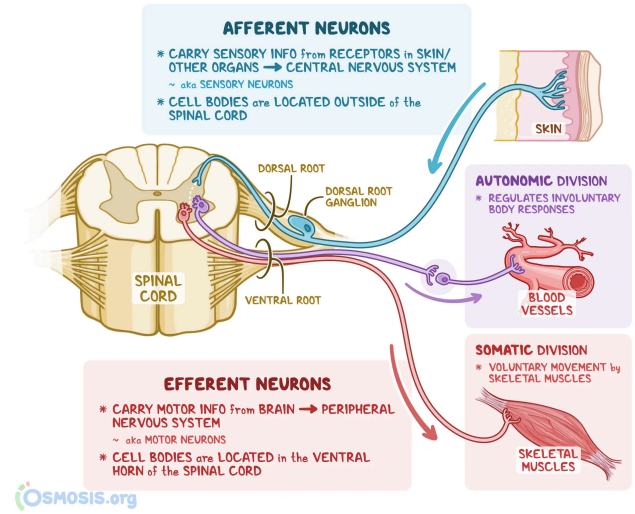
FOL(d)M(a)PS - Ovarian Cycle: Follicular phase, Ovulatory phase, and Luteal phase.
Menstrual Cycle: Menstrual flow, Proliferative phase, and Secretory Phase.

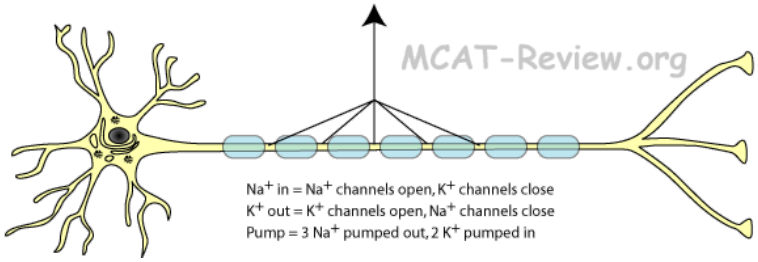
SEVEN UP - Path of Sperm in the Male Reproductive Tract:
Seminiferous tubules, Epididymis, Vas deferens, Ejaculatory Duct, N(Nothing), Urethra and Penis.

- Neurons / Action Potential / Nervous System









Khan Academy - Neurons & Synapses:
https://www.khanacademy.org/test-prep/mcat/organ-systems/neural-synapses

Crash Course - Nervous System: https://www.youtube.com/watch?v=qPix_X-9t7E

- Heart

Menonomics:
LAb RAt – to remember the bicuspid valve of the left atrium and the
tricuspid valve of the right atrium.

To remember the path of the blood:
The door to your house is the SVC/IVC entry to the right atrium.
As you walk through the house, each door will serve as a valve and the room will serve as the next Chamber.

Extra:

Memonomic:

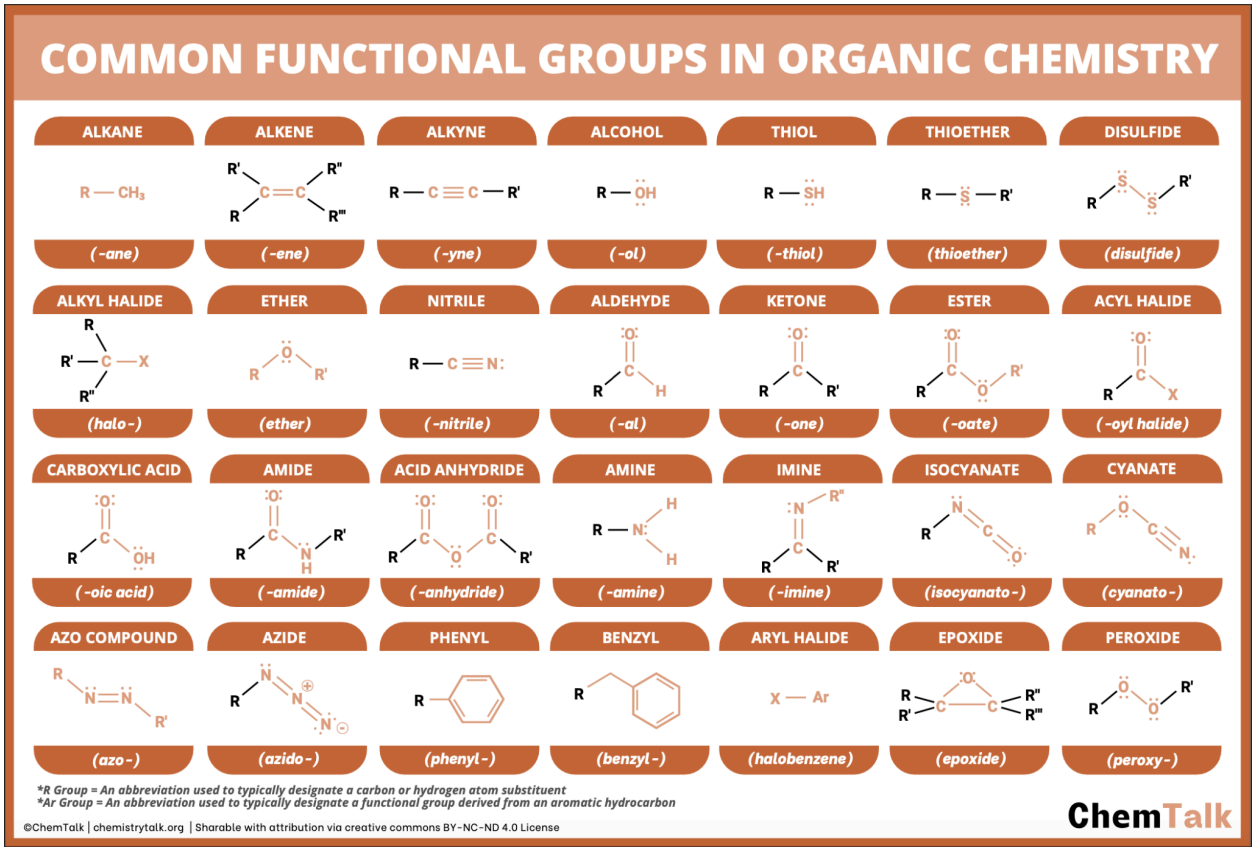
Eat Tender Chicken Chunks Elegantly is an acrostic to remember
Proteases in the Duodenum:
Enterokinase, Trypsin, Chymotrypsin, Carboxypeptidase and Elastase.

OChem:

Crash Course Videos:

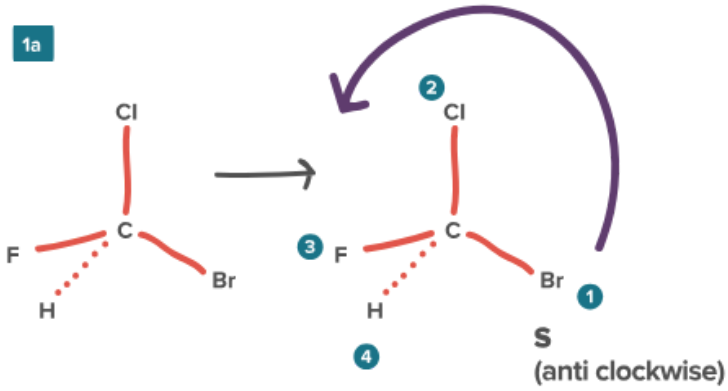
https://www.youtube.com/watch?v=bSMx0NS0XfY&list=PL8dPuuaLjXtONguuhLdVmq0HTKS0jksS4

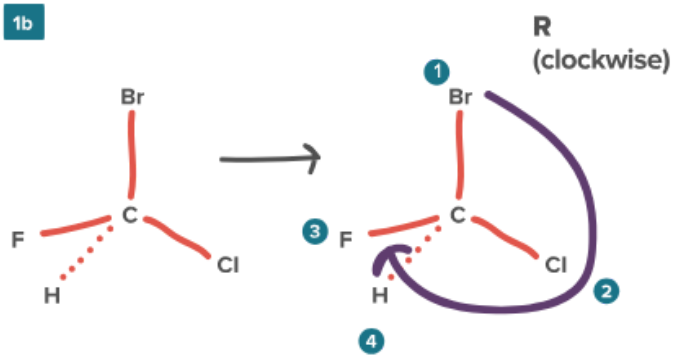
- Functional Groups



Khan Academy - Functional Groups:
https://www.khanacademy.org/test-prep/mcat/chemical-processes/organic-chemistry/v/func

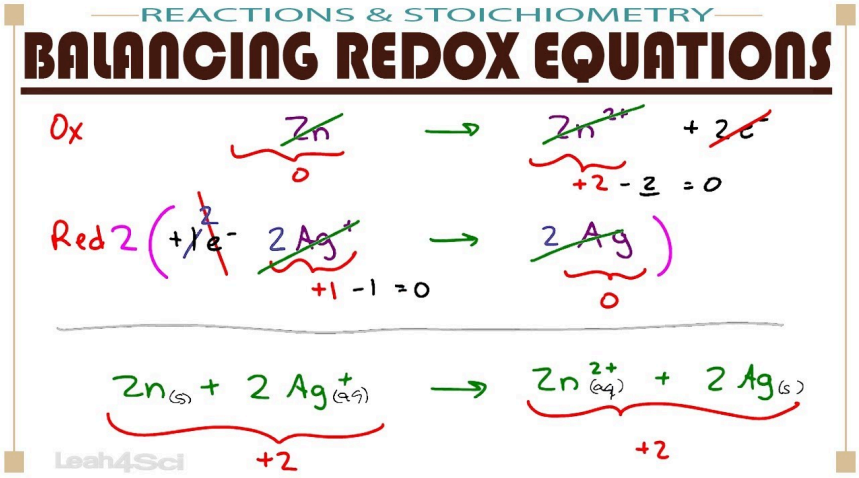
- Chirality





Leah4Sci - Chirality & R/S: https://www.youtube.com/watch?v=kJ0SEmnB7zY

- Redox Reactions



Khan Academy - Redox Chemistry:
https://www.khanacademy.org/test-prep/mcat/chemical-processes/redox-reactions/v/redox-r

- SN1 vs SN2

Aspect	SN2 Reaction	SN1 Reaction
Reaction Mechanism	- One-step mechanism with simultaneous bond-breaking and bond-forming.	- Two-step mechanism with formation of a carbocation intermediate.
	- Involves a backside attack and inversion of configuration, known as Walden inversion,	- Involves a planar intermediate and potential for racemization,
	which flips the stereochemistry of the molecule.	where both enantiomers can form, leading to a mixture of stereoisomers.
Rate-Determining Factors	- Dependent on both substrate and nucleophile	- Dependent only on the substrate
	- Second-order kinetics	- First-order kinetics
	- Rate = k [nucleophile][substrate]	- Rate = k [substrate]
Substrate Structure	- Prefers primary and secondary substrates due to less steric hindrance.	- Prefers tertiary substrates due to the stability of the carbocation.
Nucleophile and Solvent	- Strong nucleophiles and polar aprotic solvents are favored.	- Weak nucleophiles can be used, and polar protic solvents are preferred.

Khan Academy - SN1 vs SN2:
https://www.khanacademy.org/test-prep/mcat/chemical-processes/nucleophilic-substitution/v/sn1

Leah4Sci - SN1 vs SN2 Series: https://www.youtube.com/watch?v=yVR0hNysG3Y

- Lab Techniques

MCAT Organic Chemistry Lab Techniques

Extraction

Separates two substances based on **solubility**. Two immiscible solvents are used to separate the substance. The more polar substance dissolves into the aqueous layer, while the less polar substance dissolves into the organic layer. Usually, the aqueous layer is more dense, and sinks to the bottom of the funnel, while the organic layer remains on top. Rotary evaporation of the solvent can fully extract the solid solute.

Distillation

Separates two substances based on boiling point (BP). The initial mixture is heated and the substance with the lower BP evaporates and condenses out into a new container. The substance with the higher BP stays in the original container.

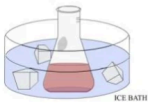
Simple Distillation: used when BP is <150C and the gap between BPs of the substances is >25C
Vacuum Distillation: used when BP is >150C
Fractional Distillation: used when gap between BPs is <25C

Filtration

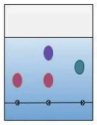
Separates a mixture of solid and liquid. The solid remains behind in the filter paper (residue) while the liquid drips through into a container (filtrate).
Gravity Filtration: Takes longer than vacuum filtration
Vacuum Filtration: Uses a vacuum to suck liquid into the container faster

Recrystallization

The intended product is mixed with a minimal amount of hot solvent so that it can dissolve fully. The product should dissolve very well into the solvent at high temperatures. Letting the mixture cool in an ice bath creates solute crystals.



Thin Layer Chromatography



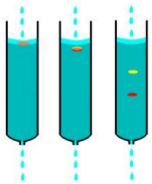
In all chromatography, a stationary phase and a mobile phase exist. If the analyte is more similar to the stationary phase it does not elute as far down the page. If it is more similar to the mobile phase, it moves further down the page. In TLC, the stationary phase is usually polar and the mobile phase is nonpolar. The Rf factor can be used to calculate different components of the original mixture.

$$R_f = \frac{\text{distance travelled by component}}{\text{distance travelled by liquid}}$$

Column Chromatography

In column chromatography, the stationary phase (adsorbent) is usually made of beads and placed in a glass column. The analyte is placed on top of the column, and the mobile phase liquid is passed through. Analyte particles more similar to the liquid elutes first, while particles that are more similar to the beads elutes last.

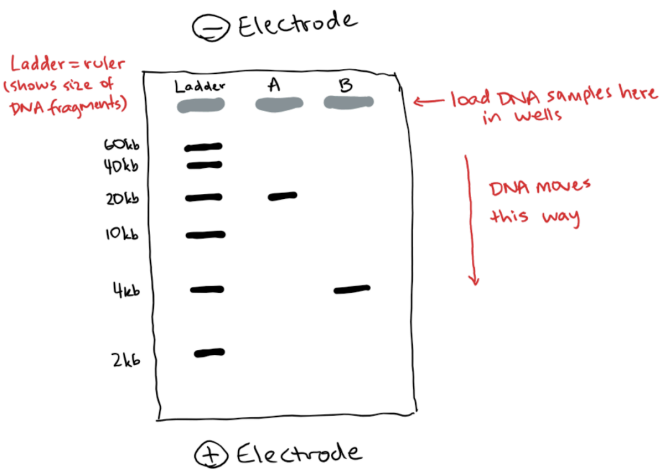
Ion Exchange: the beads are charged. Opposite charges elute first, like charges elute last.
Size Exclusion: beads have small pores that trap smaller particles, allowing large particles to elute first with the mobile phase
Affinity: beads have receptors that attract certain proteins, allowing others to elute faster



Gas Chromatography

Separates highly volatile vaporizable substances through a gas mobile phase and a liquid stationary phase. The mobile phase is usually inert helium gas or unreactive nitrogen gas. Gases that adhere well to the liquid stationary phase elute last. These readings are usually fed into a computer to perform mass spectrometry.

Method	Use
Extraction	Separates dissolved subs. Based on differential solubility in aqueous vs. organic solvents
Filtration	separates solids from liquids
Recrystallization	Separates solids based on diff. solubilities; temperature is important
Sublimation	Separates solids based on their ability to sublime
Centrifugation	Separates large things (ex. Cells, organelles, macromolecules) based on mass and density
Distillation	Separates liquids based on boiling point (depends on intermolecular forces)



Khan Academy - MCAT Lab Techniques: https://www.khanacademy.org/test-prep/mcat/chemical-processes/separations-purificaLeah4Sci

Lab Techniques Overview: https://www.youtube.com/watch?v=4tbfnZ7rZhs

Mnemonics:

SNoW DRoP – Lab techniques and the material they use. Southern blot, DNA; Northern blot, RNA, Western blot, protein