

Concepts/Topics

- Biological macromolecules - monomers, polymers, CHNOPS, purpose, found in
- Recognize structures of biomolecules
- Building polymers, breaking down polymers (dehydration synthesis/condensation, hydrolysis) how we're made (built and rebuilt constantly)
enzymes required - termites, herbivore gut fauna/flora, etc.
- Sugar - energy & structure (chitin/cellulose), open and ring structure, differ: #Cs, positions of -OHs
- Lipids - cholesterol (hormones), phospholipids, triglycerides, hydrophobic or amphipathic (phospho!), differ: fatty acids (PG & TG), funct. groups (cholesterol-based)
fatty acids - saturated, monounsaturated, unsaturated, essential fatty acids
trans fats - partially hydrogenated ... (should be gone by 2018!!), natural fats are mostly cis
- Proteins - ending: "-in", hormones, enzymes (-ase), differ: R group for each AA, essential AAs
structure/form (primary - quaternary), how affected by heat, pH, etc. (enzyme function)
- Nucleic acids - DNA vs. RNA, "information" (much of class on how info is used and how passed on)
transfer energy - ATP (nucleotide)
- Enzymes - structure (composition and shape!), active site, function, reaction/energy graph
- proteoglycans, glycoproteins, glycolipids, etc.
- origins of organic molecules (if require enzymes usually) - primordial soup, hydrothermal vents, comets

Readings

Principles of Life (2013), Chpt. 2 (pp.26-34), Chpt. 3

"F.D.A. Sets 2018 Deadline to Rid Foods of Trans Fats" (NY Times - 16 Jun 2015)

Homework/Activities

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|---|------------|
| <input type="checkbox"/> Worksheet: Science Vocabulary | Due: _____ |
| <input type="checkbox"/> Worksheet: Nutrition Activity | Due: _____ |
| <input type="checkbox"/> Article Questions: NY Times Trans Fats article | Due: _____ |
| <input type="checkbox"/> TBA: _____ | Due: _____ |

Helpful Web Links

You Are What You Eat (Crash Course)
Trans Fats and Why They're Bad (DNews)

www.youtube.com/watch?v=H8WJ2KENIK0
www.youtube.com/watch?v=Eo4Lrce5Eil

Videos/Tutorials

Hydrolysis/Dehydration Synthesis (RicochetScience)
Dehydration Synthesis (Khan Academy)
Hydrolysis (Khan Academy)
Biological Molecules (Bozeman)
Molecules of Life (Bozeman)
Carbohydrates (Bozeman)
Proteins (Bozeman)
Lipids (Bozeman)
Enzymes (Bozeman)
Organic Compounds (Brightstorm)
Chemistry Carbs (Brightstorm)
Proteins (Brightstorm)
Lipids (Brightstorm)
Enzymes (Brightstorm)
Nucleic Acids (Brightstorm)
DNA Structure (Brightstorm)
RNA Structure (Brightstorm)

www.youtube.com/watch?v=ZMTeqZLXBS0
www.youtube.com/watch?v=FEAXI5XeJ4M
www.youtube.com/watch?v=SOQyiM6V3RQ
www.youtube.com/watch?v=PYH63o10iTE
www.youtube.com/watch?v=QWf2jcznLsY
www.youtube.com/watch?v=_zm_DyD6FJ0
www.youtube.com/watch?v=2Jgb_DpaQhM
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