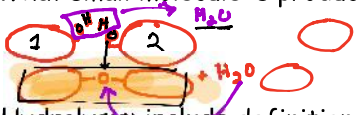
Group 1: Macromolecules

- € Slide 1: Title
- € Slide 2: Four types of macromolecules carbohydrate, lipid Protein, Nucleic Acid
- € Slide 3: Distinguish macromolecules from nutrients
  macro. are just 1 type of nutrient
- € Slide 4: Compare organic to inorganic molecules
  1. How do organic molecules differ from inorganic molecules?
     ↓ Carbon ↳ No C
  2. Give two examples of organic molecules.
     Alcohol, Methane
  3. Give two examples of inorganic molecules.
     Water (H_2O), Iron (FeO_2)
- € Slide 5: Describe the role/importance of carbon in macromolecules
  4. How may bonds can each atom of carbon form? 4
  5. The atoms in a covalent bond Share electrons. (share/gain/lose)

- € Slide 6: Description of polymerization, include descriptions of monomers and polymers
  6. How do monomers and polymers differ?
     monomers - small
     Polymers - Large
  7. How are monomers and polymers similar?
     Made of same material

- € Slide 7: Diagram of a monomer and a polymer

- € Slide 8: Dehydration synthesis; include definition, purpose, and diagram
  8. What happens during a dehydration synthesis reaction?
     loss of water Build
  9. What small molecule is produced as a byproduct in a dehydration reaction?



- € Slide 9: Hydrolysis; ~~include~~ definition, purpose, and diagram
  10. What type of reaction breaks polymers into monomers?
      Hydrolysis → Digest
      water Breaking
- € Slide 10: Relate chemical reactions (hydrolysis/dehydration synthesis) and the role of water in living organisms

Drink water for hydrolysis

Group 2: Carbohydrates
Follow the directions to make your power point

- € Slide 1: Title
- € Slide 2: Elements found in carbohydrates; include the ratio of atoms
  1. What three elements are found in all carbohydrates? (hint, look at a picture)
- € Slide 3: Monomer unit of complex carbohydrates; include a picture/diagram of the monomer
  2. Two monosaccharides joined together form a poly/saccharide.
  3. What does the prefix *poly-* mean? many
  4. Most carbohydrates are made from the same monomer. What is the name of this monomer? Sugar = Glucose
- € Slide 4: Role(s) carbohydrates provide/play in organisms
  5. What are carbohydrates used for in the body? Energy
  6. What is the function of cellulose in plants? Support
  7. What is the function of chitin in insects? Shell - Skeleton
  8. What type of carbohydrate do plants use to store energy? Starch
- € Slide 5: Types of carbohydrates
  9. What is one example of a polysaccharide?
- € Slide 6: Food sources; include pictures/diagrams
  10. How do people get the glucose they need in their bodies?

Eat -

- € Slide 7: Benefits to consuming monosaccharide to polysaccharides for humans

Fast Energy long term

- € Slide 8: Review of the good/bad from the nutrient activity

Group 3: Lipids
Follow the directions to make your power point

- € Slide 1: Title
- € Slide 2: Elements found in lipids; include the ratio of atoms compared to carbohydrates
  1. What <u>elements</u> make up lipids?

C, O, H, P

€ Slide 3: Monomer unit of fats in general; include a picture/diagram of the monomer

2. How many fatty acids need to be added to glycerol to make one fat molecule?

3 1

€

€ Slide 4: Are fats hydrophobic or hydrophilic; what does that mean for the blood stream?

3. What is one property that all lipids have in common?

won't dissolve in water (blood)

€

€ Slide 5: Role(s) fats provide/play in organisms

4. Give two examples of ways fats are used in the body?

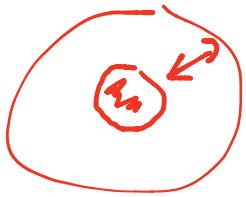
Insulate, cushion, store energy

5. What is the function of phospholipids in living things?

Cell membranes

6. Provide one example of how a wax is used in nature.

Prevent drying out leaves



€ Slide 6: Types of lipids

7. What is the difference between a fat and an oil?

Animal ← Solid ↳ liquid → plant.

€ Slide 7: Two major types of fat; include chemical description and state of matter at room temp, and source (plant or animal)

8. What are two examples of saturated fats? Butter, Lard

€ Slide 8: Food sources; include pictures/diagrams

€ Fried, Meat (Beef)

€ Slide 9: Good vs. bad fat; which is which and why?

9. What is the difference between a saturated fat and an unsaturated fat?

10. What type of fat is said to be unhealthy and why?

Saturated - dissolves worst in blood

Group 4: Proteins

Follow the directions to make your power point

€ Slide 1: Title

€ Slide 2: Elements found in protein

1. What 4 elements make up proteins?

2. Which of these elements (from question one) is not found in carbohydrates and lipids?

€ Slide 3: Monomer unit of proteins in general; include a picture/diagram of the monomer

3. What are the monomers of proteins?

Amino Acid

4. How many amino acids make up all of the proteins in living things? 20
5. What is the bond called that forms between two amino acids? peptide
6. What is the name of the reaction that joins two amino acids together? Dehydration Synthesis
7. What type of molecule is created as a byproduct when amino acids are joined together? H_2O

€ Slide 4: Explain how the variety exists; why are there over 100,000 types in the body?

20 amino acids
1000 amines long
20^{1000}
There are almost infinite ways to combine the 20 aa.

€ Slide 5: Role(s) protein provide/play in organisms (at least 5)

8. What are proteins used for in the body?
   - build most body parts
   - runs all functions

€ Slide 6: Types of protein

9. What are two examples of proteins in living things?
   Keratin - leathery stuff skin, Hair, nails
   Hemoglobin - red. carries O_2 in blood.

€ Slide 7: 4 levels of organization and structure

10. What must be done to a polypeptide chain to make it a functioning protein?
    Tertiary - Has to fold into correct 3D Shape

€ Slide 8: Food sources; include pictures/diagrams

Meat, Dairy, Nuts, beans, eggs

52 cards

How many 2 card combos?

2^{52}