

Group 1: Macromolecules

- Slide 1: Title
- Slide 2: Four types of macromolecules
- Slide 3: Distinguish macromolecules from nutrients
- Slide 4: Compare organic to inorganic molecules
 1. How do organic molecules differ from inorganic molecules?
 2. Give two examples of organic molecules.
 3. Give two examples of inorganic molecules.
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- Slide 5: Describe the role/importance of carbon in macromolecules
 4. How many bonds can each atom of carbon form?
 5. The atoms in a covalent bond _____ electrons. (share/gain/lose)
- Slide 6: Description of polymerization, include descriptions of monomers and polymers
 6. How do monomers and polymers differ?
 7. How are monomers and polymers similar?
- 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?
 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?
- Slide 10: Relate chemical reactions (hydrolysis/dehydration synthesis) and the role of water in living organisms

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 _____.
 3. What does the prefix *poly-* mean?
 4. Most carbohydrates are made from the same monomer. What is the name of this monomer?
- Slide 4: Role(s) carbohydrates provide/play in organisms
 5. What are carbohydrates used for in the body?
 6. What is the function of cellulose in plants?
 7. What is the function of chitin in insects?
 8. What type of carbohydrate do plants use to store energy?
- 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?
- Slide 7: Benefits to consuming monosaccharide to polysaccharides for humans
- 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 elements make up lipids?

- 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?

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- 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?

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- Slide 5: Role(s) fats provide/play in organisms
 4. Give two examples of ways fats are used in the body?

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

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

- Slide 6: Types of lipids
 7. What is the difference between a fat and an oil?

- 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?

- Slide 8: Food sources; include pictures/diagrams

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- 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?

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?
 4. How many amino acids make up all of the proteins in living things?
 5. What is the bond called that forms between two amino acids?
 6. What is the name of the reaction that joins two amino acids together?
 7. What type of molecule is created as a byproduct when amino acids are joined together?
- Slide 4: Explain how the variety exists; why are there over 100,000 types in the body?
- Slide 5: Role(s) protein provide/play in organisms (at least 5)
 8. What are proteins used for in the body?
- Slide 6: Types of protein
 9. What are two examples of proteins in living things?
- Slide 7: 4 levels of organization and structure
 10. What must be done to a polypeptide chain to make it a functioning protein?
- Slide 8: Food sources; include pictures/diagrams

Group 5: Nucleic Acids

- Slide 1: Title
- Slide 2: Elements found in nucleic acids
 1. What elements are found in nucleic acids?
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- Slide 3: Monomer unit of nucleic acids in general; include a picture/diagram of the monomer
 2. What are the monomers of nucleic acids?

 3. How does the size of Nucleic Acids compare to the size of the other Biological Molecules?
- Slide 4: Detailed description of the 3 parts of the monomer unit
 4. What three things are nucleic acids made of?

 5. What 4 bases make up DNA?

 6. What 4 bases make up RNA?
- Slide 5: Role(s) nucleic acids provide/play in organisms
 7. What is the function of DNA in living things?

 8. What is the difference between the function of DNA and the Function of RNA?
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- Slide 6: Types of nucleic acids; include picture/diagrams to explain differences
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- Slide 7: Hereditary/Evolutionary importance of nucleic acids
 9. Explain what type of environmental factors can damage DNA and describe how that damage is bad for the organism.
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- Slide 8: Explanation of why they are not a nutrient
 10. Why aren't nucleic acids a nutrient?

Group 6: Chemical reactions and enzymes

- Slide 1: Title
- Slide 2: Define chemical reactions
 1. Enzymes are considered to be biological catalysts. What is a catalyst?
 2. Are enzymes consumed (used up) in a reaction?
- Slide 3: Chemical equation; labels should include (reactant, product, subscript, & coefficient) and explanation of each
 3. What is the special name given to a reactant (molecule) which binds to an enzyme?
 4. What is the place on the enzyme where the substrate binds?
 5. How are an enzyme and a substrate like a lock and key?
- Slide 4: Define activation energy; how do enzymes affect it?
- Slide 5: Role(s) enzymes provide/play in organisms
 6. What do enzymes do in the body?
- Slide 6: Characteristics of enzymes; include macromolecule type, are they reusable? are they specific?
 7. Which type of organic molecules are enzymes made of?
 8. Are enzymes specific to a reaction or can one type of enzyme be used on many different reactions?
- Slide 7: Explain "denatured" and its causes
 9. What is it called when an enzyme unfolds and comes apart?
 10. What factors can change the shape of an enzyme reducing its effectiveness?
- Slide 8: How are enzymes named?
- Slide 9: Diagram of an enzyme catalyzed reaction

Group 7: Vitamins

Follow the directions to make your power point

- Slide 1: Title
- Slide 2: Define vitamins
 1. What elements are found in vitamins?
- Slide 3: Distinguish between the 2 major types and how/where they're stored
 2. What does it mean to be water soluble? Examples.
 3. What does it mean to be fat soluble? Examples.
- Slide 4: Describe how water soluble types help humans
- Slide 5: Describe how fat soluble types help humans
 4. What do vitamins do for human health?
- Slide 6: Choose a minimum of 3 and determine their chemical formula, explain why not all are soluble in water
- Slide 7: Describe how they can harm us (vitamin deficiencies)
 5. How can vitamins harm us?
- Slide 8: What foods are best to eat? (contain the widest variety)
 6. What foods should we eat to obtain vitamins?
 7. Explain if there is there any real benefit to drinking vitamin water.
- Slide 9: Discuss which can be made by us/ w/in us
 8. What vitamins can our bodies make themselves?
- Slide 10: Explain why some have names and others don't
 9. Why do some vitamins have names and others have just letters?

Group 8: Minerals

Follow the directions to make your power point

- Slide 1: Title
- Slide 2: Define minerals
 1. Are minerals metals or nonmetals?
- Slide 3: Describe what trace elements are, and describe what elements minerals are
- Slide 4: Explain the importance of Calcium
- Slide 5: Explain the role of Iron
- Slide 6: Describe why some towns have fluorinated water
- Slide 7: How are they obtained?
 2. How do we get minerals we need?
- Slide 8: How are they lost?
 3. How does our body lose minerals?
 4. Why doesn't our body metabolize minerals like we do for carbs/lipids/protein?
- Slide 9: Explain the sodium/potassium pump
 5. How are Sodium and Potassium helpful?
- Slide 10: How are we affected by mineral loss?