€ 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?

€

€ 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?

€

€ 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

€

€ 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 <u>elements</u> make up proteins? C O H N

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

€ Slide 3: Monomer unit of proteins in general; include a picture/diagram of the monomer
3. What are the monomers of proteins?
Amino Acids

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?
The order of the 20 amino acids is almost infinite
52 2^{52}

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

8. What are proteins used for in the body?
   Build cells – Part of almost everything
   Become enzymes - do all cell activities

€ Slide 6: Types of protein

9. What are two examples of proteins in living things?
   Keratin - skin, hair, nails
   Hemoglobin - 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?
    It has to fold into the right 3D Shape

€ Slide 8: Food sources; include pictures/diagrams
Meat Beans / Nuts
Dairy

Group 5: Nucleic Acids

€ Slide 1: Title

€ Slide 2: Elements found in nucleic acids

✓ 1. What elements are found in nucleic acids?

€ COHNP

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

2. What are the monomers of nucleic acids?
   Nucleotide
3. How does the size of Nucleic Acids compare to the size of the other Biological Molecules?
   HUGE

€ Slide 4: Detailed description of the 3 parts of the monomer unit

4. What three things are nucleic acids made of?
   Phosphate . 5-C sugar . Nitrogen Base
5. What 4 bases make up DNA?
   A T C G

6. What 4 bases make up RNA? UTCG

€ 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?

€ DNA - Original Genes From parents
RNA - Copies of individual genes

€ Slide 6: Types of nucleic acids; include picture/diagrams to explain differences

€ DNA | mRNA messenger | tRNA transfer | rRNA ribosome

€ 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.

DNA Damage = Cancer

€ Radiation (X-rays), UV light (Sun), Chemicals

€ Slide 8: Explanation of why they are not a nutrient

10. Why aren't nucleic acids a nutrient?

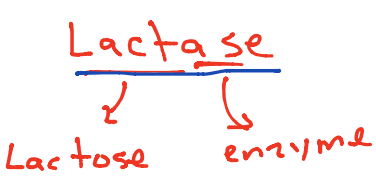
They have no calories. Your are not made of them

Anything Alive

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?
     Something that speeds up reactions
  2. Are enzymes consumed (used up) in a reaction?
     No
- € Slide 3: Chemical equation; labels should include (reactant, product, subscript, & coefficient) and explanation of each
  - X 3. What is the special name given to a reactant (molecule) which binds to an enzyme?
    Substrate
  - X 4. What is the place on the enzyme where the substrate binds?
    Active Site
  - X 5. How are an enzyme and a substrate like a lock and key?
    Only one substrate fits one enzyme.
- € Slide 4: Define activation energy; how do enzymes affect it?
  ↳ energy needed to start reaction
  → Decrease how much you need.
- € Slide 5: Role(s) enzymes provide/play in organisms
  6. What do enzymes do in the body?
     - Digest food ⟶ Hydrolysis
     - Build body parts ⟶ Dehydration Synthesis
- € Slide 6: Characteristics of enzymes; include macromolecule type, are they reusable? are they specific?
  7. Which type of organic molecules are enzymes made of?
     Protein
  8. Are enzymes specific to a reaction or can one type of enzyme be used on many different reactions? Specific to one.
- € Slide 7: Explain "denatured" and its causes
  9. What is it called when an enzyme unfolds and comes apart?
     Protein unfolds - stops working
  10. What factors can change the shape of an enzyme reducing its effectiveness?
      Heat
      pH - (Acid / Base)
      Salt
      Egg white
      inhibitors
- € Slide 8: How are enzymes named?
  -End in ase begin with substrate
- € 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? C O H N

- € Slide 3: Distinguish between the 2 major types and how/where they're stored
  2. What does it mean to be water soluble? Examples.
     Dissolves in water C, B_2, K
  3. What does it mean to be fat soluble? Examples.
     Dont dissolve in water A, B_{12}, D, E
- € Slide 4: Describe how water soluble types help humans
  C = healing cut K = Clot blood
- € Slide 5: Describe how fat soluble types help humans
  4. What do vitamins do for human health?
     D = bone formation B_{12} - Energy
- € 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?
     Taking too many (fat soluable) can damage liver.
- € Slide 8: What foods are best to eat? (contain the widest variety)
  6. What foods should we eat to obtain vitamins?
     Veggies, fruit, Dairy
  7. Explain if there is there any real benefit to drinking vitamin water.
     Yes, can give 10% of vitamin needs.
- € Slide 9: Discuss which can be made by us/ w/in us
  8. What vitamins can our bodies make themselves?

     D K

- € Slide 10: Explain why some have names and others don't
  9. Why do some vitamins have names and others have just letters?

     Letters = What they are in body

     Names = how you eat them

     Vitamin C = Ascorbic Acid

Group 8: Minerals
Follow the directions to make your power point

- € Slide 1: Title
- € Slide 2: Define minerals – Inorganic molecules needed in diet
  1. Are minerals metals or nonmetals? Both
- € Slide 3: Describe what trace elements are, and describe what elements minerals are
  Need in small amounts
  Ca, Cl, P, K, Na
- € Slide 4: Explain the importance of Calcium
  Build bones
- € Slide 5: Explain the role of Iron
  - Needed to carry oxygen in blood.
- € Slide 6: Describe why some towns have fluorinated water
  Stronger teeth
- € Slide 7: How are they obtained?
  2. How do we get minerals we need?
  In food
- € Slide 8: How are they lost?
  3. How does our body lose minerals?
  most don't. Sweat
  4. Why doesn't our body metabolize minerals like we do for carbs/lipids/protein?
  They help enzymes, the are not used up.
- € Slide 9: Explain the sodium/potassium pump
  5. How are Sodium and Potassium helpful?
  Nerve messages –
- € Slide 10: How are we affected by mineral loss?