

EOG Review: Cells and Microbiology

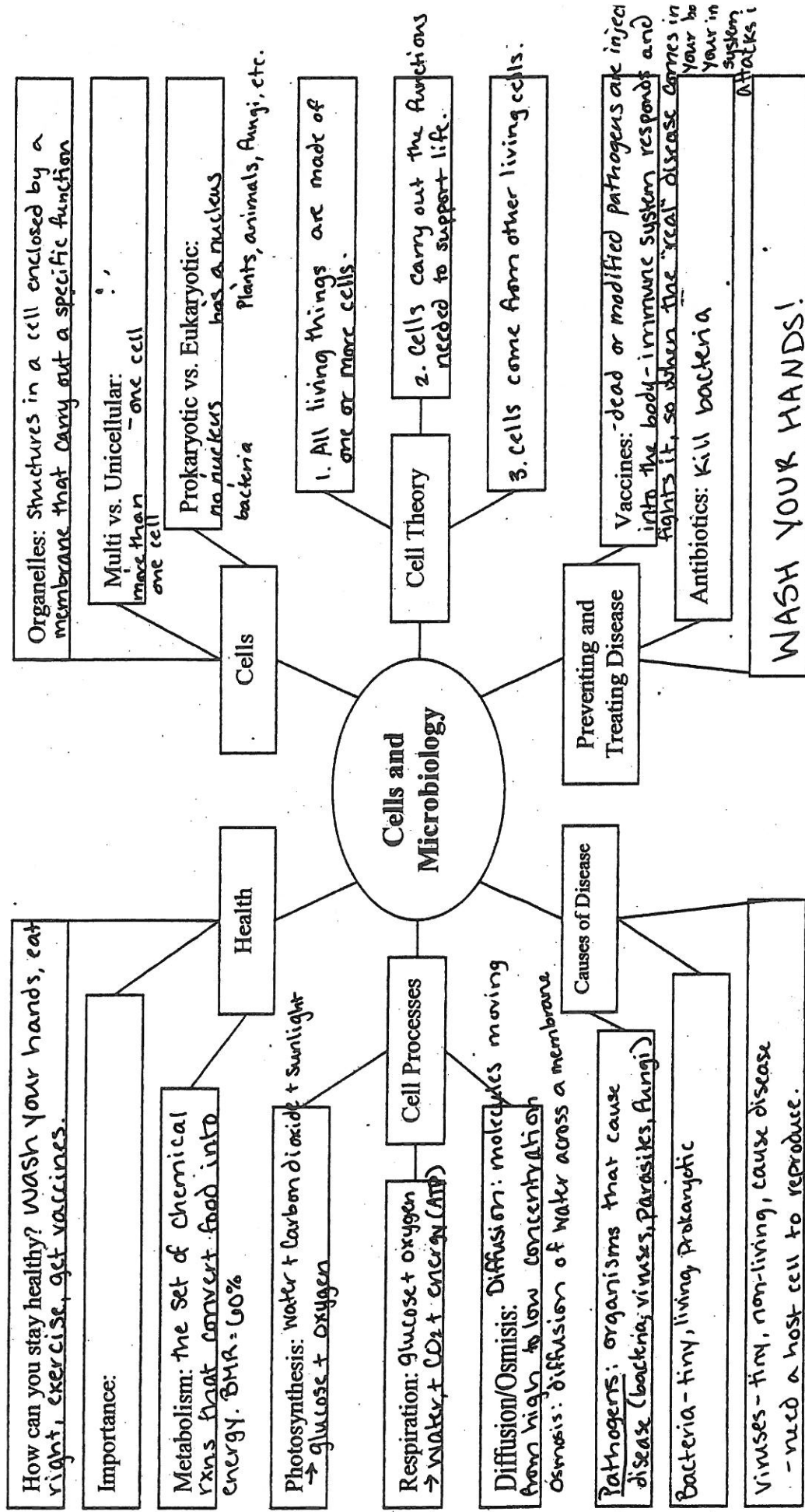
- The three statements of the cell theory are:
 - All living things are made of cells
 - cells carry out the functions to support life.
 - Cells come from other living cells.
- An organism that is made up of only one cell is called a(n) unicellular organism.
- An organism that is made up of more than one cell is a multicellular organism.
- A eukaryotic cell has a nucleus and a prokaryotic cell does not.
- Inside the cytoplasm, you will find the "little organs" of the cell called organelles.
- When cells react glucose with oxygen to get energy, this is known as cellular respiration.
- Photosynthesis occurs in the chloroplasts, and cellular respiration occurs in the mitochondria.
- How are photosynthesis and cellular respiration related? opposite rxns
- Energy for almost all organisms comes from the sun.
- Diffusion is the process by which molecules spread out.
- Osmosis is the diffusion of water through a membrane.
- DNA is a chemical that contains information for an organism's growth and functions.
- The organelle that tells the cell what to do (the "boss" of the cell) is the nucleus.
- Mitosis is the stage of the cell cycle in which the nucleus divides.
- What is basal metabolic rate and what % of your metabolic rate does it account for?
60% - basic life functions like breathing, heartbeat, etc.

Pathogen	Living or Nonliving	Size/Structure	Diseases/Symptoms	Treatments
Virus	nonliving	Very small, DNA + protein shell	-varied symptoms - flu, Chicken pox, HIV	-Some antiviral meds - vaccines to prevent
Bacteria	living	small, prokaryotic, unicellular	-varied symptoms - strep throat, pneumonia	- antibiotics - vaccines to prevent
Parasites	living	- usually protists - uni- or multicellular	- diarrhea, larvae in stool (poop) - giardia, coccidia, roundworms	- anti-parasitic meds
Fungi	living	- eukaryotic - small or large colonies	- ringworm, fungal meningitis	- anti-fungals

- Define contagious: able to spread from one organism to another
- What is an infectious disease? a disease that is contagious - can be spread.
- A mosquito is an example of a vector because it can transfer malaria to humans.
- Typhoid Mary was a carrier because she carried the typhoid bacteria but never became sick with typhoid.
- Bacteria reproduce through binary fission. One cell divides so there are two. 2 cells divide to make 4, which divide to make 8, which divide to make 16 cells.
- Describe at least three situations that could allow diseases to spread.
 - Not washing hands
 - contact with animals/insects
 - contact with other humans.
- What chemicals do you use that say "anti-bacterial"? Kills bacteria - hand sanitizer, soap
- Antibiotics are medicines that can be used to kill bacteria. - Don't work on viruses!!!
- Some microorganisms can develop resistance to certain antibiotics if the antibiotic is not used correctly.
- What is a vaccine and what are they used for? - used to prevent disease.
- vaccine - contains dead or weakened pathogens that trigger your immune system to fight the pathogen, so that your body can recognize and attack the pathogen before it makes you sick.
- The form of energy used by your body is called ATP.
- What is Germ Theory and who came up with it?
Pasteur - Says infectious diseases are caused by microorganisms ("germs")
- What are the 4 types of large molecules? List examples of foods that contain each one.
 - Carbohydrates - sugars - fruit, bread, potatoes, etc. ("carbs")
 - Lipids - fats - butter, oil, animal fat
 - Proteins - made up of nucleic acids - meat, nuts
 - Nucleic acids - DNA + RNA
- List 3 ways that food molecules are used in your body.
 - Used as fuel (for energy)
 - Used to build body structures/tissues
 - Stored as fat
- What is a pathogen? an organism (or virus) that causes disease.
- What is the difference between an epidemic and a pandemic?
epidemic - outbreak of disease in a local area, but pandemic is a global outbreak.
- Define biotechnology and list 3 ways that it affects your life.
Biotechnology - using living things to solve problems or make products.
 - Food
 - industry

Name KEY

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Summarize what is shown in this diagram.